SIEMENS

CCMS2010-IR (LAN PoE)
CCMS2010-IRW (WiFi)

2 Megapixel Compact IP Camera with IR illumination

User Manual

Siemens AB

Security Products

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2 About this document

2.1 Content of document

This document contains information on the configuration of the product.

2.2 Meaning of symbols

Orientation guide

[-> 3]	Cross-reference
Save	Button
<Ctrl>	Key

Tips and information

2.3 Target group

Commissioning personnel	● **Configure the product at the place of installation according to customer-specific requirements.** ● **Check the product operability and release the product for use by the operator.** ● **Searches for and corrects malfunctions.**	● **Has obtained suitable specialist training for the function and for the products.** ● **Has attended the training courses for commissioning personnel.**

Operating personnel	● **Performs the procedures for proper operation of the product.**	● **No particular qualification required.** ● **Has received instruction from the operational startup personnel.**

3 Safety

3.1 General safety precautions

Read the general safety precautions before installing/configuring/operating the device.

- Follow all warnings and instructions marked on the device.
- Keep this document for reference purposes.
- This document must always accompany the product.

Liability claim

- Use only spare parts and accessories that have been approved by the manufacturer.

3.2 Transport

- Keep the packaging material for future transportation.
- Do not expose the device to mechanical vibrations or shocks.

3.3 Installation

- It is recommended that all preparatory work (e.g. fitting of accessories) be carried out in a workshop prior to final installation.
- The environmental conditions recommended by the manufacturer must be observed. See section 'technical data'.
- Do not operate the device close to sources of powerful electromagnetic radiation.
- The device should only be used for indoor applications.
- The mounting surface must be solid and non-combustible.

Danger of electrical shock/fire hazard/damage to the device due to incorrect connection

- Connect the device only to a power source that complies with SELV requirements and with the Limited Power Source requirements to EN 60950-1.

3.4 Maintenance

- Do not attempt to service or modify this device yourself. Refer this work to qualified service personnel.
- Do not use liquid cleaners or sprays that contain alcohol, spirit or ammonia.

3.5 Sensor characteristics

The following conditions may be observed when using a CMOS camera. These are inherent in the design and do not stem from any fault in the camera itself.

- Vertical smear:

This phenomenon occurs when viewing a very bright object.

- Patterned noise:

This is a fixed pattern, which may appear over the entire monitor screen when the camera is operated at a high temperature or in a low luminance environment.

- Jagged picture:

When viewing stripes, straight lines, or similar patterns, the image on the screen may appear jagged.

4 EU-directives

This product complies with the requirements of the following European directives.

The EU declaration of conformity is available to the responsible agencies at:

Siemens AB
Infrastructure & Cities
Security Products
International Headquarters
Englundavägen 7
SE-171 41 SOLNA

European Directive 2004/108/EC „Electromagnetic Compatibility”

Compliance with the European Directive 2004/108/EC has been proven by testing according to the following standards:

Emitted interference:	EN 55022 Class B
Interference resistance:	EN 50130-4

Power supply

Ensure that the AC power supply is stable and within the rated voltage of the unit. Use an uninterrupted power supply (UPS) to ensure a continuous function of the unit in the event of power dips on the AC mains supply.

European Directive 1995/5/EC “Radio and telecommunications terminal equipment (RTTE)”

Compliance with the European Directive 1995/5/EC has been proven by testing according to the following standards:

Safety	EN 60950-1
Radio	EN 301 489-1 EN 301 489-17 EN 300 328

,

5 Technical data

Camera		**CCMS2010-IR**	**CCMS2010-IRW**
Image Sensor		1/2.7” Progressive CMOS	
Effective Pixels		1920 (H) x 1080 (V)	
Minimum Illumination		Colour: 0.2 lux (F2.0) 30 IRE B/W: 0.02 lux (F2.0) 30 IRE	
White Balance		Manual / AWB / ATW	
Shutter Speed		1 ~ 1/10000 sec.	
Lens			
Focal Length		2.8 mm	
F Number		F2.0	
Operation			
Multiple Languages		German / English / Spanish / French / Italian / Japanese / Korean / Portuguese / Russian / Simplified Chinese / Traditional Chinese	
Image Setting	Backlight Compensation	On / Off	
	White Balance	Auto / Manual / ATW / One Push	
	Noise Reduction (3D)	On / Off	
	Wide Dynamic Range	On / Off	
	Privacy Mask	On / Off	
	Brightness	Manual	
	Exposure	Auto / Manual	
	Sharpness	Manual	
	Contrast	Manual	
	Saturation	Manual	
	Hue	Manual	
	Digital Zoom	Support	
	Motion Detection	On / Off / By Schedule	
	Privacy Mask Type	Color	
	ICR	Auto / On / Off / Smart	
	ICR + IR LED*	Auto / LED On / LED Off / Smart IR / Light Sensor	
	Tampering Alarm	On / Off / By Schedule	
Audio	Two-way Audio	Built-In Microphone and Speaker	
	Compression	G.711 / G.726	
Network			
Interface		RJ-45, 10/100 Mbps	WiFi 802.11 b/g/n 2.4GHz
Video Compression		H.264 / MJPEG	
Video Streaming		Dual Streams- H.264 + H.264 / H.264 + MJPEG Quad Streams- H.264 x 4 / H.264 x 3 + MJPEG	
Video Resolution		H.264- Full HD 1080P / SXGA / HD 720P / XGA / SVGA / D1 / VGA / CIF MJPEG- Full HD 1080P / SXGA / HD 720P / XGA / SVGA / D1 / VGA / CIF	
Frame Rate		Dual Streams- 1080P (30/25 fps) + D1 (30/25 fps)	
Protocol		IPv4/v6, TCP/IP, UDP, RTP, RTSP, HTTP, HTTPS, ICMP, FTP, SMTP, DHCP, PPPoE, UPnP, IGMP, SNMP, QoS, ONVIF, ARP	
Security / Authorization		HTTPS / IP Filter / IEEE 802.1X	HTTPS / IP Filter / WEP / WPA / WPA2 Wireless Security
Alarm	Input	1 Set, 5V 10kΩ pull up	
	Output	1 Set, Photo Relay Output	
Event Notification		HTTP / FTP / SMTP	
microSD		microSDHC 32GB Support	
Supported Web Browser		Internet Explorer (6.0+) / Chrome / Firefox / Safari	
User Account		20	
Password Levels		User and Administrator	
Mechanical			
Built-in IR Illuminator	Working distance	up to 5m (dependent on scene reflectance)	
	Wavelength	850 nm	
	Number of LEDs	2	
Power Connection		PoE / DC Jack	Micro USB (with 1A USB Adapter)
LED Indicator		Power / Link / ACT	Power (Green) / WiFi (Orange)
Connectors	Alarm	4 Pin Terminal Block (Female)	
	Power	DC Jack	Micro USB Port

	Ethernet	RJ-45	N/A
General			
Operating Temperature		-10°C ~ 50°C	
Humidity		10% ~ 90%, No Condensation	
Dimension		96.51 x 56.00 x 61.40 mm	
Weight		120 g	
Power Source		PoE / DC 12V	1A USB Adapter 5V
Power Con-sumption	System	3 W	
	Built-In IR Illuminator	+0.8 W	
Regulatory		CE	

6 Details for ordering

Type	Order No.	Designation
CCMS2010-IR	S54561-C112-A100	2 Megapixel IP Compact Camera with Infrared , LAN PoE
CCMS2010-IRW	S54561-C112-A200	2 Megapixel IP Compact Camera with Infrared , WiFi

Further products and accessories can be found in the internet:
https://is.spiap.com/products/video.html

6.1 Package contents

- IP camera
- Resource kit CD
- Quick Install Guide
- Wall Bracket
- Micro SD card (4GB)

- Jack/Terminal Adapter (PoE model only)
- 12VDC Power Adapter (PoE model only)

- 5VDC Power Adapter with USB/Micro-USB cable (WiFi model only)

7 Overview

The CCMS2010-IR/W compact IP Camera is an easy setup camera with PoE or WiFi (depending on Model) supported to reduce complicate cabling.

The IP Camera has a built-in microphone and speaker which allows two-way audio communication. 2 Megapixel Resolution is supported for providing high definition images. Quad Streams Compression (H.264 Baseline / Main / High Profile + MJPEG) are available for efficient bandwidth and storage management. For low-light situations, the IP Camera has incorporated Day/Night ICR technologies to capture clear images.

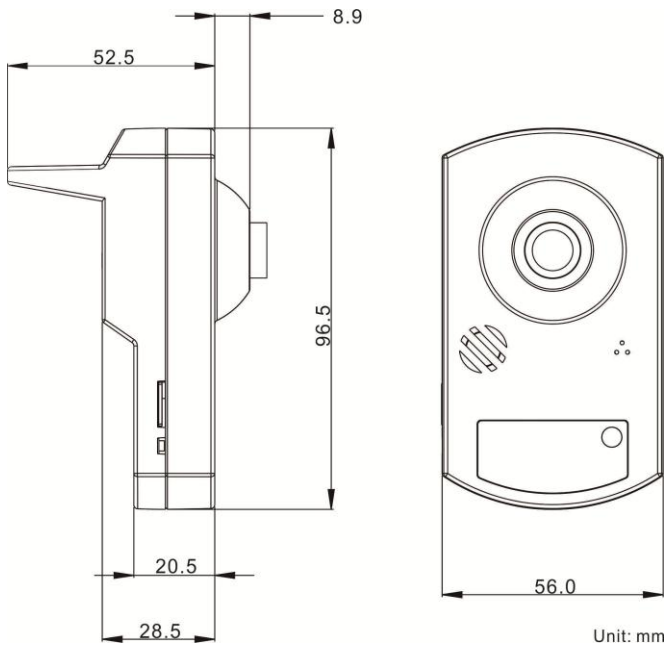
7.1 Features

- Progressive Scan CMOS Sensor
- 2M Resolution
- Quad Streams Support
- Dual streams- Full HD 1080P Real-Time + D1 Real-Time
- Quad Streams Compression- H.264 Baseline / Main / High Profile + MJPEG
- Multi-language Support
- Wide Dynamic Range
- Built-In Microphone and Speaker
- Motion Detection
- Privacy Masks
- Smart Picture Quality / 3D Noise Reduction
- Smart IR Mode
- Day/Night (ICR)
- IR LED Module (working distance up to 5 m)
- microSD Support
- ONVIF Support

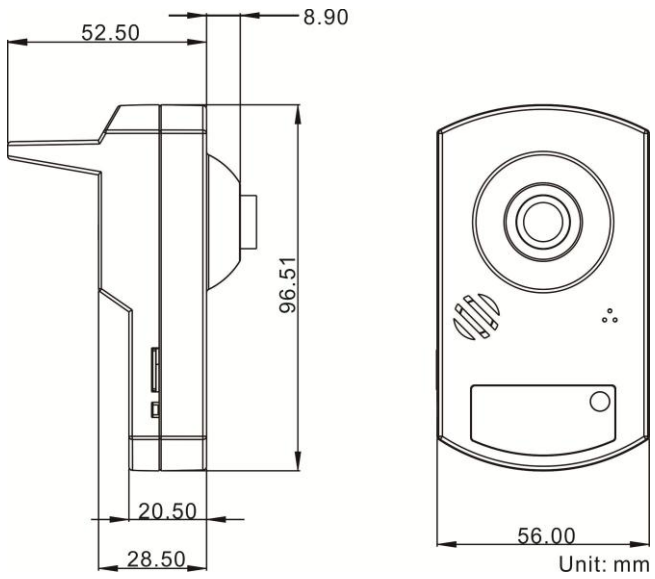
7.2 Dimensions

The dimensions of the IP Camera are shown below.

CCMS2010-IR



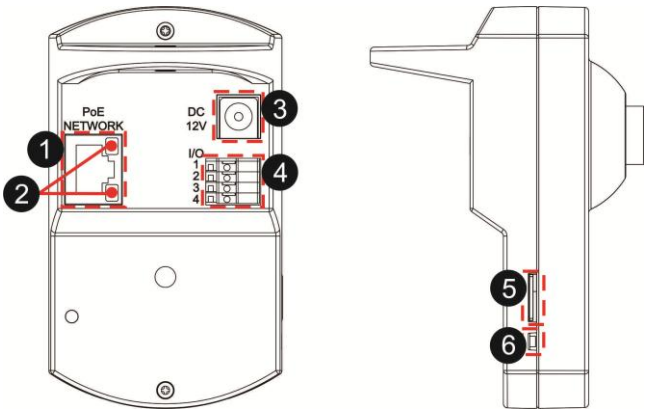
CCMS2010-IRW



7.3 Connectors

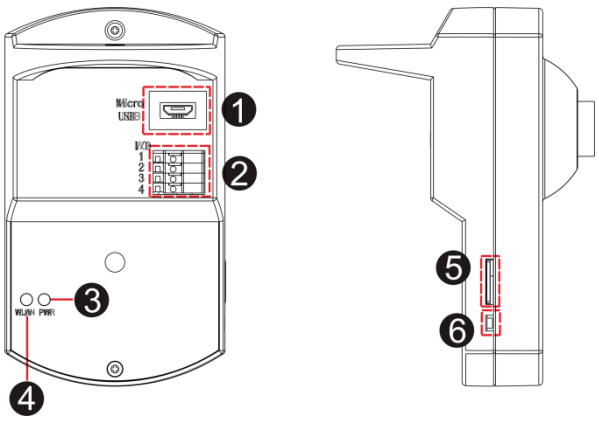
The diagrams below show the connectors of the IP Camera. Definition for each connector is also given as follows.

CCMS2010-IR



	Connector	Definition	
1	PoE NETWORK	For Ethernet cable and PSE connection	
2	Network LEDs	Network connection and activity indication	
3	DC 12V Connector	For power connection	
4	Alarm I/O	1	Alarm Output +
		2	Alarm Output −
		3	Alarm Input +
		4	Alarm Input −
5	microSD Card Slot	For videos and snapshots storage	
6	Default Button	Press the button with a proper tool for at least 20 seconds to restore the system.	

CCMS2010-IRW



	Connector	Definition	
1	Micro USB Port	For Power connection	
2	Alarm I/O	1	Alarm Output +
		2	Alarm Output −
		3	Alarm Input +
		4	Alarm Input −
3	Power LED	Power indication	
4	WLAN LED	Wireless network connection and activity indication	
5	microSD Card Slot	For videos and snapshots storage	
6	Default Button	Press the button with a proper tool for at least 20 seconds to restore the system.	

8 Camera cabling

Please follow the instructions below to complete IP Camera connection.

8.1 Connect Power

CCMS2010-IR

Please refer to section 7.3 Connectors. Alternatively, users can power the camera by PoE. Use an Ethernet cable and connect it to the camera and a PoE switch.

NOTE: If PoE is used, make sure Power Sourcing Equipment (PSE) is in used in the network.

CCMS2010-IRW

Please refer to section 7.3 Connectors. Plug the camera's Micro USB Power Supply Adapter connecting with the Micro USB cable into the power outlet, and connect the other end of the cable to the camera's Micro USB port. Alternatively, connect the Micro USB Cable to the Micro USB port of the camera and plug the other end of the cable into the USB port of the computer.

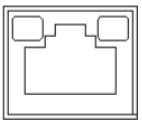
8.2 Connect Ethernet Cable

CCMS2010-IR

Use of Category 5 Ethernet Cable is recommended for network connection. To have best transmission quality, cable length shall not exceed 100 meters. Connect one end of the Ethernet cable to the PoE Network connector of the IP Camera, and plug the other end of the cable to the network switch or PC.

NOTE: In some cases, Ethernet Crossover cable might be needed when connecting the IP Camera directly to the PC.

Check the status of the link indicator and activity indicator LEDs. If the LEDs are unlit, please check LAN connection.



Green Link Light indicates good network connection.
Orange Activity Light flashes for network activity indication.

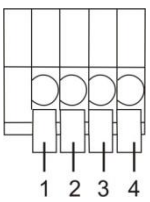
CCMS2010-IRW

Check the status of the Wireless LAN (WLAN) LED. If the LED is unlit, please check if the camera is connected to the network.

The LED in orange light indicates good network connection.

8.3 Connect Alarm I/O

The camera equips one alarm input and one relay output for alarm application. Refer to alarm pin definition below to connect alarm devices to the IP Camera if needed.



PIN 1: Output +
PIN 2: Output −
PIN 3: Input +
PIN 4: Input −

9 System requirements

To perform the IP Camera via web browser, please ensure the PC is in good network connection, and meet system requirements as described below.

Items	System Requirement
Personal Computer	1. Intel® Pentium® M, 2.16 GHz or Intel® Core™2 Duo, 2.0 GHz 2. 2 GB RAM or more
Operating System	Windows VISTA / Windows XP / Windows 7 / Windows 8
Web Browser	Microsoft Internet Explorer 6.0 or later Firefox Chrome Safari
Network Card	10Base-T (10 Mbps) or 100Base-TX (100 Mbps) operation
Viewer	ActiveX control plug-in for Microsoft IE

10 WIFI setting

Before accessing the IP Camera, the initial connection setting of the IP Camera must be setup. However, with different ways of powering on the IP Camera, camera connection will also be configured differently. The following describes how to setup the IP Camera via the Power Adapter Connection and USB Connection.

Power Adapter Connection Setup (Recommended)

When the IP Camera is powered on with the power adapter, the camera is an Access Point (AP) by default. As an AP, the camera serves as central transmitter and receiver of Wi-Fi signals. In this case, users have to switch the IP Camera from an AP to a WiFi device. Otherwise, the camera cannot be performed as a surveillance camera. Follow the steps below to switch the IP Camera from an AP to a WiFi device.

Step 1: Power on the IP Camera with the power adaptor.

Step 2: Enable WLAN on users' computer or laptop.

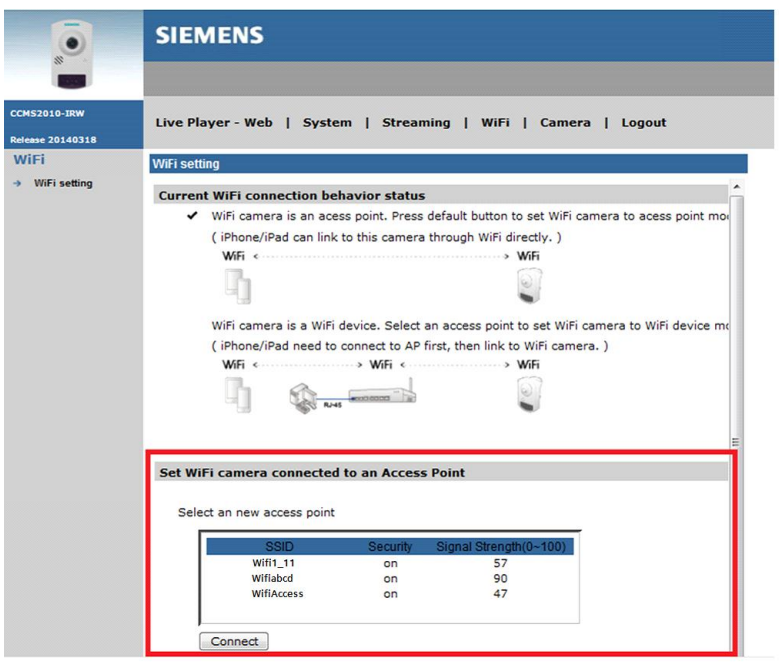
Step 3: Click on the internet connection icon < > at the bottom-right of the taskbar, a list of Access Points will be displayed.

Step 4: Double click on <WiFiCamera> to connect the Access Point. The default password of the AP is 87654321.

Step 5: Open a web browser and enter the default IP address of the IP Camera, 192.168.0.10. Then input the default username / password (**admin** / **admin**).

Step 6: After the Browser-based Viewer is displayed, click on the <WiFi> tab to connect the IP Camera to an Access Point.

Step 7: Under <Set WiFi camera connected to an Access Point>, select a preferred Access Point and enter its password, and then click <Connect>. See the figure below.


SIEMENS
CCMS2010-IRW
Release 20140318
Live Player - Web | System | Streaming | WiFi | Camera | Logout
WiFi
WiFi setting
WiFi setting
Current WiFi connection behavior status
WiFi camera is an acess point. Press default button to set WiFi camera to acess point mo
(iPhone/iPad can link to this camera through WiFi directly.)
WiFi
WiFi
WiFi camera is a WiFi device. Select an access point to set WiFi camera to WiFi device mo
(iPhone/iPad need to connect to AP first, then link to WiFi camera.)
WiFi
WiFi
WiFi
Set WiFi camera connected to an Access Point
Select an new access point
SSID Security Signal Strength(0~100)
Wifi1_11 on 57
Wifiabcd on 90
WifiAccess on 47
Connect

Step 8: Click <OK> in the prompt window.

Step 9: A message window will be displayed, click <Yes> to close the Browser-based Viewer.

The IP address of the IP Camera will be altered. Thus, users have to re-search the new IP address of the IP Camera by running the device search tool. After retrieving the new IP address of the IP Camera, users can continue to access and setup other settings of the camera.

NOTE: For further information about the device search tool, please refer to section 11. Access Camera.

USB Connection Setup

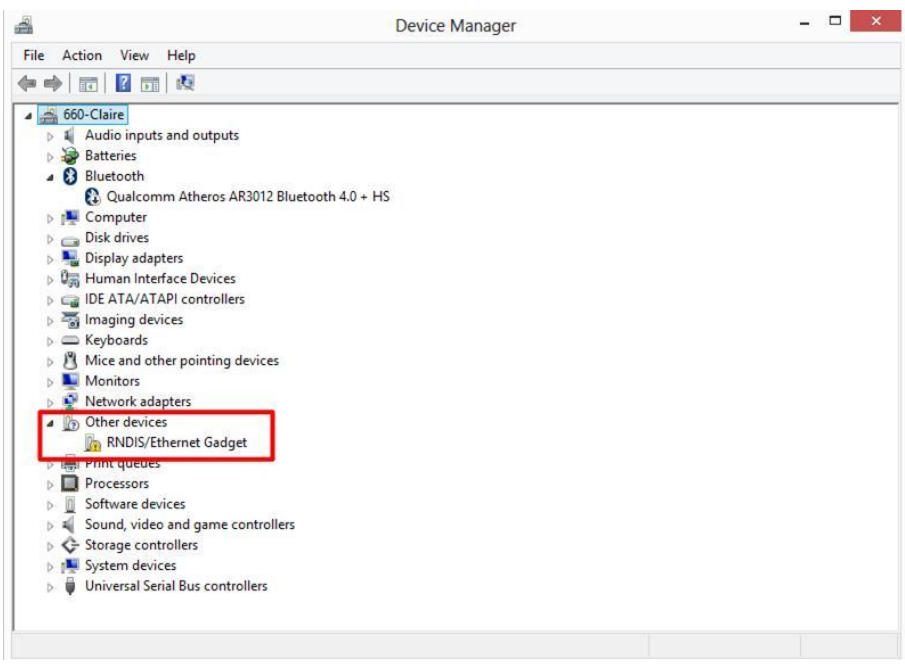
If the power of the IP Camera is supplied via the USB port of a computer, users have to install the IP Camera driver (RNDIS/Ethernet Gadget driver) to the computer. The following describes how to install the driver and setup the IP Camera network connection settings.
Note: The USB cable used for this method shall be a USB data cable (not provided).

Step 1: Connect the IP Camera to the USB port of the computer.

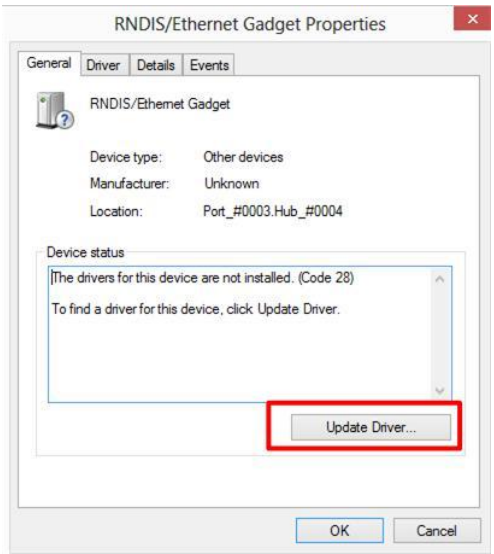
Step 2: Click on <Start>, type <cmd> in the search bar and select cmd.exe. Then, input <ipconfig>. Note down the IP address under Local Area Connection.

Step 3: Right click on the Computer icon on the desktop, and then select <Properties> → <Device Manager>.

Step 4: Double click on <RNDIS/Ethernet Gadget> under <Other devices>.



Step 5: The RNDIS/Ethernet Gadget Properties window will be displayed. Click <Update Driver…>.

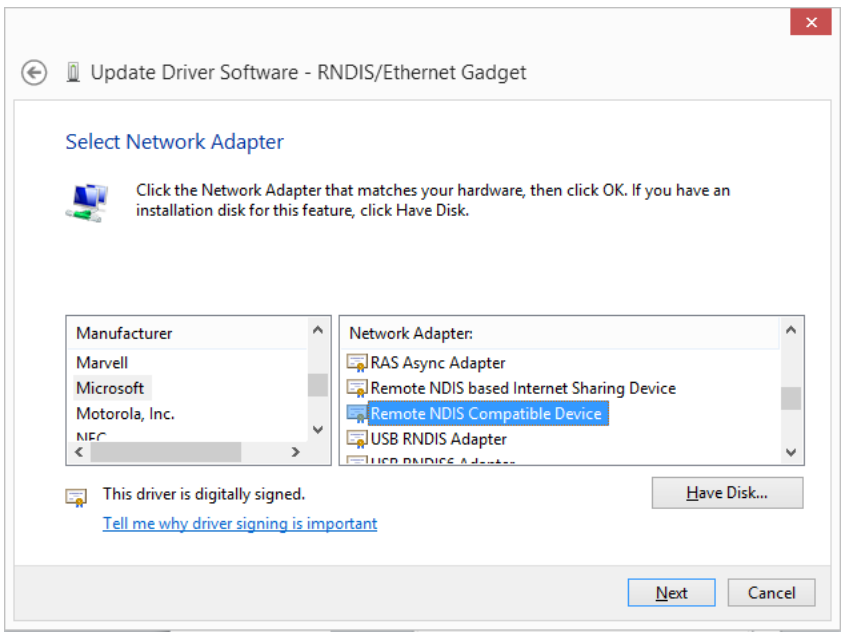


Step 6: Select <Browse my computer for driver software>.

Step 7: Select <Let me pick from a list of…>.

Step 8: Double click on <Network adapters> under <Common hardware types :>.

Step 9: Select Microsoft from the Manufacturer list first, and then select Remote NDIS Compatible Device for Network Adapter. Click <Next>.


Update Driver Software - RNDIS/Ethernet Gadget
Select Network Adapter
Click the Network Adapter that matches your hardware, then click OK. If you have an installation disk for this feature, click Have Disk.
Manufacturer
Marvell
Microsoft
Motorola, Inc.
Network Adapter:
RAS Async Adapter
Remote NDIS based Internet Sharing Device
Remote NDIS Compatible Device
USB RNDIS Adapter
This driver is digitally signed.
Tell me why driver signing is important
Have Disk...
Next
Cancel

NOTE: For Windows 7 users, select **Microsoft Corporation** from the Manufacturer list.

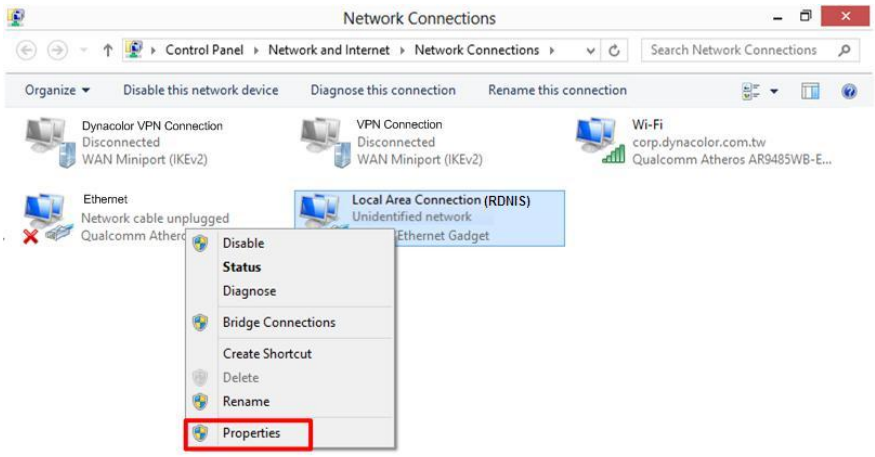
Step 10: A warning window will pop up. Click <Yes>.

Step 11: A message window from Windows will pop up, click <Close> to exit.

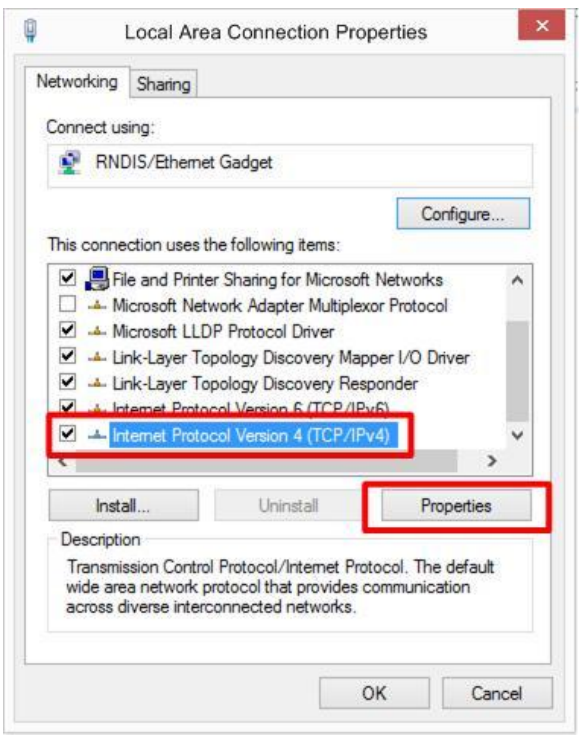
Step 12: Under the RNDIS/Ethernet Gadget Properties window, the Device status will describe “The device is working properly.” Click <Close> to exit.

Step 13: Right click on the Network icon on the desktop, and then select <Properties> → <Change adapter settings>.

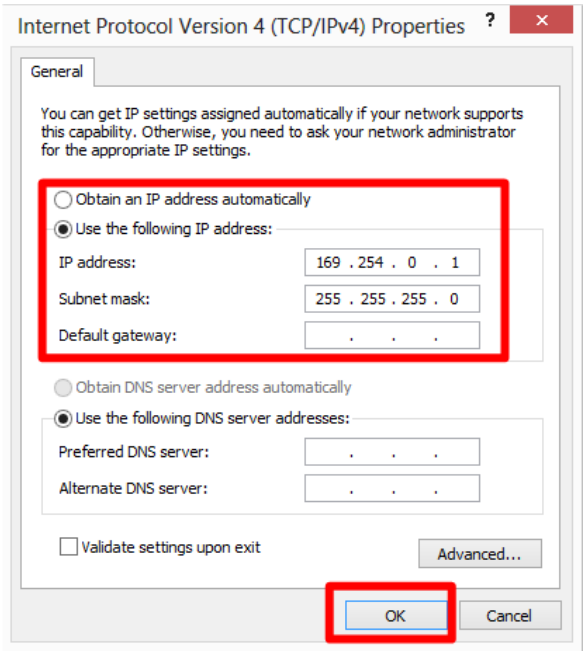
Step 14: Right click on the Local Area Connection (RDNIS) icon, and select <Properties>.



Step 15: Select Internet Protocol Version 4 (TCP/IPv4). Click <Properties>.



Step 16: Setup the IP address as the picture below. The IP address must be: 169.254.0.XXX. Note that the range of the last decimal number “XXX” is from 1 to 249. Subnet must be: 255.255.255.0. After finishing the settings, click <OK> to exit.


Internet Protocol Version 4 (TCP/IPv4) Properties
General
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.
Obtain an IP address automatically
Use the following IP address:
IP address:
169 . 254 . 0 . 1
Subnet mask:
255 . 255 . 255 . 0
Default gateway:
Obtain DNS server address automatically
Use the following DNS server addresses:
Preferred DNS server:
Alternate DNS server:
Validate settings upon exit
Advanced...
OK
Cancel

Step 17: Click <Close> to exit the Local Area Connection Properties window.

After the above settings are completed, the last step is to go to the camera's Browser-Based Viewer to connect the camera to an Access Point. Open a web browser and enter the default IP address of the IP Camera (169.254.0.250). Next, please follow the same instruction from Step 6 to Step 9 in previous subsection, Access Point Connection Setup.

The IP address of the IP Camera will be altered. Thus, users have to re-search the new IP address of the IP Camera by running the device search tool. After retrieving the new IP address of the IP Camera, users can continue to access and setup other settings of the camera.

NOTE: Before accessing the camera, users MUST modify the IP address of the computer to its original IP address, which users previously noted down. Otherwise, users cannot access the camera.

NOTE: For further information about the device search tool, please refer to the next chapter, 11. Access Camera.

11 Access camera

For initial access to the IP Camera, users can search the camera through the installer program: SIEMENS_DeviceSearch.exe, which can be found in “DeviceSearch” folder in the supplied CD.

Accessing Device Search Software

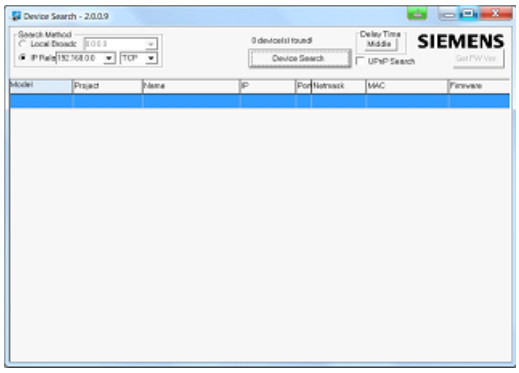
Step 1: Double click on the program SIEMENS_Device Search.exe. After its window appears, click on the <Device Search> button on the top side.

Step 2: The security alert window will pop up. Click on <Unblock> to continue.

Device Search

Step 3: Click on <Device Search> again, and all the finding IP devices will be listed in the page. The IP Camera’s default IP address is: **192.168.0.10**

Step 4: Double click or right click and select <Browse> to access the camera directly via web browser.



Step 5: A Prompt window requesting for default username and password will appear. Enter the default username and password shown below to log-in to the IP Camera.

Login ID	Password
admin	**admin**

NOTE: ID and password are case sensitive, and it is strongly advised that the administrator’s password be altered for the security concerns.

Additionally, users can change the network property of the IP Camera to DHCP or Static IP directly in the device finding list. Refer to the following section for changing the network property of the IP Camera.

Example of Changing the IP Camera's Network Property

Users can directly change an IP Camera's network property, ex. from static IP to DHCP, in the finding device list. The way to change the network property of the IP Camera is specified below:

Step 1: In the finding device list, click on the IP Camera that is wished to change its network property. On the selected item, right click and select "Network Setup". Meanwhile, record the MAC address of the IP Camera, for future identification.

Step 2: The "Network Setup" page will come out. Select "DHCP", and press "Apply" button down the page.

Step 3: Click on <OK> on the Note of setting change. Wait for one minute to re-search the IP Camera.

Step 4: Click on the <Device Search> button to re-search all the devices. Then select the IP Camera with the correct MAC address. Double click on the IP Camera, and the login window will come out.

Step 5: Enter User name and Password to access the IP Camera.

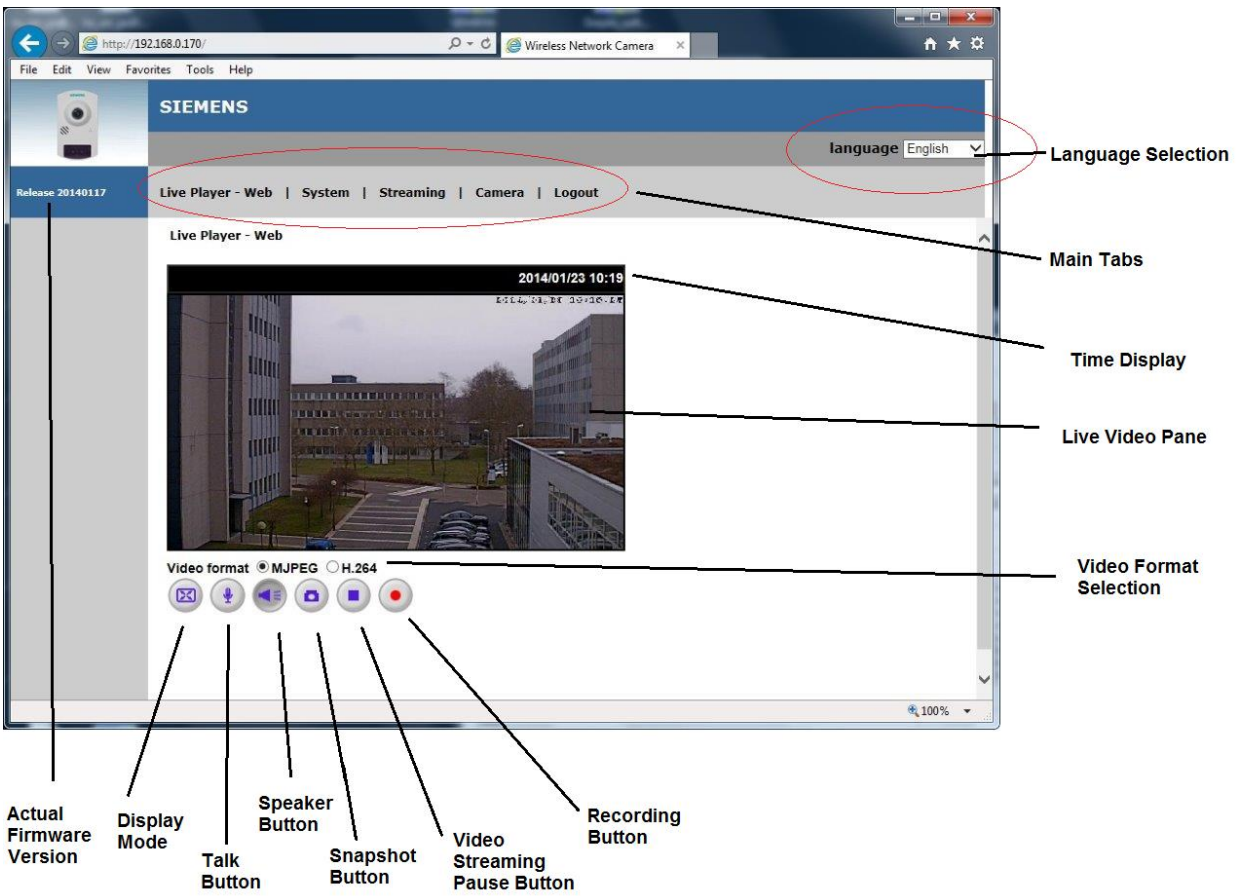
Display of Live View Stream Online

For the initial access to the IP Camera, it is recommended to use Internet Explorer. After setting the correct IP address in the URL bar of IE, the login mask is highlighted. After adding a user and password, the Live Viewer will be automatically installed to the PC when connecting to the IP Camera.

If the Web browser does not allow Live Viewer installation, please check the Internet security settings or ActiveX controls and plug-ins settings (refer to chapter Appendix: Setup Internet Security) to continue the process.

The Information Bar (just below the URL bar) may come out and ask for permission to install the ActiveX Control for displaying video in browser. Right click on the Information Bar and select <Install ActiveX Control…> to allow the installation.

Once all modules for Internet Explorer are successfully installed, the IP Camera's Home page will be able to correctly display as the figure below.



Note: Please refer to chapter Camera settings for more button function detail.

12 Camera settings

The IP Camera is provided with a user-friendly browser-based configuration interface. In this manual, information about main page introduction, system related settings and camera settings will be described in detail.

12.1 Menu Tree of the GUI (Graphical User Interface)

There are five main tabs including <Live Player Web>, <System>, <Streaming>, <Camera> and <Logout> on the Home Page.

Live Player Web
Users can monitor live video of the targeted area.

System setting
The administrator can set host name, system time, root password, network related settings, etc. Further details will be interpreted in chapter Camera settings - System.

Streaming setting
The administrator can modify video resolution and rotate type and select audio compression mode in this page.

Camera setting
This setting page is only available for the administrator and user accounts that have been granted the privilege of camera control. In this setting page, the administrator and Users can adjust various camera parameters, including <Exposure>, <White Balance>, <Picture Adjustment>, <Backlight>, <Digital Zoom>, <IR Function>, <WDR Function>, <Noise Reduction> and <TV System>.

Logout
Click on the tab to re-login to the IP Camera with another username and password.

12.2 Main Tab “Live Player-Web”

Click on the tab <**Live Player-Web>** to access the home page. There are several function buttons on the home page. Detailed information of each item is as described in the following section.

Multiple Languages Support
Multiple languages are supported, including German, English, Spanish, French, Italian, Japanese, Korean, Portuguese, Russian, Simplified Chinese and Traditional Chinese for the viewer window interface.

Digital Zoom Control
In the full screen mode, users can implement digital PTZ by rotating the mouse wheel (for zoom in / out), and drag the mouse into any direction.

Screen Size Adjustment

Image display size can be adjusted to full screen.

Talk button (On / Off)

Talk function allows the local site to talk to the remote site. Click on the button to enable / disable the talk function. Please refer to Security> User> Add User> Talk / Listen for further details. This function is only open to “User” who has been granted this privilege by the administrator.

Speaker button (On / Off)

Click on the <Speaker> button to mute / activate the audio.

NOTE: This function is only available for “User” who has granted this privilege by the administrator.

Snapshot button
Click on the button and the JPEG snapshots will automatically be saved in the appointed place. The default place of saving snapshots is: C:\. To change the storage location, please refer to File Location for further details.

NOTE: For users with Windows 7 operating system, it is required to log on as an administrator to implement the Snapshot function.

Video Streaming Pause / Restart button (Pause / Restart)

Click on the <Stop> button to disable video streaming, the live video will be displayed as black. Click on the <Restart> button to show the live video again.

Web Recording button (On / Off)

Click on the <Recording> button and the Live View through the web browser will be directly recorded to the specific location on the local hard drive, which could be configured in the <File Location> page. The default storage location for the web recording is: C:\. Please refer to File Location for further details.

NOTE: For users with Windows 7 operating system, it is required to log on as an administrator to implement the Web Recording function.

12.3 Main Tab “System”

Under the tab <**System**>, there are submenus including: <System>, <Security>, <Network>, <DDNS>, <Mail>, <FTP>, <HTTP>, <Events>, <Storage Management>, <Recording>, <Schedule>, <File Location>, <View Information>, <Factory Default>, <Software Version>, <Software Upgrade> and <Maintenance>.

NOTE: The <System> configuration page is only accessible by the administrator.

12.3.1 System

The System setting can be found under the path: **System> System.**

Host Name
The name is for camera identification. If alarm function (refer to Events> Application) is enabled and is set to send alarm message by Mail / FTP, the host name entered here will be displayed in the alarm message. The maximum length of the Host Name is 63 characters.

Time Zone
Select the time zone from the drop-down menu according to the location of the camera.

Enable Daylight Saving Time
To enable DST, please check the item and then specify time offset and DST duration. The format for time offset is [hh:mm:ss]; for instance, if the amount of time offset is one hour, please enter “01:00:00” into the field.

Time format
Choose a time format (yyyy/mm/dd or dd/mm/yyyy) from the drop-down menu. The format of date and time displayed above the live video window will be changed according to the selected format.

Sync with Computer Time
Select the item, and the video date and time will synchronize with the PC’s.

NOTE: Users **MUST** click on the <Save> button to confirm the setting. Otherwise the time will not be synced.

Manual
In this item, the administrator can set the video date and time manually. Entry format should be identical with the examples shown next to the enter fields.

Sync with NTP server
Network Time Protocol (NTP) is an alternate way to synchronize the camera’s clock with a NTP server. Please specify the server that is wished to synchronize in the enter field. Then select an update interval from the drop-down menu. For further information about NTP, please refer to the web site: www.ntp.org.

NOTE: The synchronization will be done every time the camera boots up.

Click on <Save> to save the settings.

12.3.2 Security

The Security setting can be found under this path: **System> Security**.

Click on the <Security> category, there will be a drop-down menu with tabs including <User>, <HTTPS>, <IP Filter> and <IEEE 802.1X>.

User
The User setting can be found under this path: **System> Security> User**.

Admin Password
This item is for the administrator to reset password. Enter the new password in <Admin password> and <Confirm password>. The maximum length is 14 characters. The input characters / numbers will be displayed as dots for security purposes. Click on <Save> to confirm the changes. After the changes are confirmed, the web browser will ask the administrator to re-login to the camera with the new password.

NOTE: The following characters are valid: A-Z, a-z, 0-9, !#$%&'-.@^_~.

Add User
This item is for the administrator to add new users. Enter the new user's name in <User name> and the password in <User password>. Username can be up to 16 characters, and the maximum length of the password is 14 characters. Tick the boxes below to give privileges for functions, including "**Camera control**", "**Talk**" and "**Listen**". Click on <Add> to add the new user. The name of the new added user will be displayed in the <User name> drop-down list. There is a maximum of twenty user accounts.

- **I/O access**

This item supports fundamental functions that enable users to view the live video when accessing to the camera.

- **Camera control**

This item allows the appointed user to change camera parameters on the camera setting page.

- **Talk / Listen**

Talk and Listen functions allow the appointed user in the local site (PC site) communicating with, for instance, the administrator in the remote site.

Manage User

- **Delete user**

Pull down the <User name> drop-down list and select the username that is wished to delete. Click on <Delete> to remove the selected name.

- **Edit user**

Pull down the <User name> drop-down list and select a username. Click on <Edit> and a popup window will appear. In the appeared window, enter the new user password and reset the privileges. Click on <Save> to confirm the changes. Then click on <Close> to complete the editing.

Streaming Authentication Setting
This setting provides security against unauthorized users from getting streaming via Real Time Streaming Protocol (RTSP). If the setting is enabled, users will be requested to enter user name and password before viewing the live streams.

There are three security modes available: Disable, Basic and Digest. Refer to the descriptions below for more details.

- **Disable**

If disable mode is selected, there will be no security provided to against unauthorized access. Users will not be asked to input user name and password for authentication.

- **Basic**

This mode can only provide basic protection for the live streams. There will still be risks for the password being intercepted.

- **Digest**

Digest mode is a safer option for protection. The password is sent in an encrypted format to prevent it from being stolen.

HTTPS

The HTTPS setting can be found under this path: **System> Security> HTTPS**.

HTTPS allows secure connections between the IP Camera and web browser using <Secure Socket Layer (SSL)> or <Transport Layer Security (TLS)>, which ensure camera settings or username / password info from snooping. It is required to install a self-signed certificate or a CA-signed certificate for implementing HTTPS.

To use HTTPS on the IP Camera, a HTTPS certificate must be installed. The HTTPS certificate can be obtained by either creating and sending a certificate request to a Certificate Authority (CA) or creating a self-signed HTTPS certificate, as described below.

Create Self-signed Certificate

Before a CA-issued certificate is obtained, users can create and install a self-signed certificate first.

Click on <Create> and provide the requested information to install a self-signed certificate for the IP Camera. Please refer to the last part of this section: Provide the Certificate Information for more details.

NOTE: The self-signed certificate does not provide the same high level of security as when using a CA-issued certificate.

Install Signed Certificate

Click on the <Create Certificate Request> button to create and submit a certificate request in order to obtain a signed certificate from CA.

Provide the request information in the create dialog. Please refer to the following Provide the Certificate Information for more details.

When the request is complete, the subject of the Created Request will be shown in the field. Click on <Properties> below the Subject field, copy the PEM-formatted request and send it to the selected CA.

When the signed certificate is returned, install it by uploading the signed certificate.

Provide the Certificate Information

To create a Self-signed HTTPS Certificate or a Certificate Request to CA, please enter the information as requested:

	Create Self Signed Certificate	Create Certificate Request
Country	√	√
State or Province	√	√

Locality	√	√
Organization	√	√
Organizational Unit	√	√
Common Name	√	√
Valid Day	√	-

- **Country**

Enter a 2-letter combination code to indicate the country which the certificate will be used in. For instance, type in “US” to indicate United States.

- **State or province**

Enter the local administrative region.

- **Locality**

Enter other geographical information.

- **Organization**

Enter the name of the organization to which the entity identified in “Common Name” belongs.

- **Organization Unit**

Enter the name of the organizational unit to which the entity identified in “Common Name” belongs.

- **Common Name**

Indicate the name of the person or other entity that the certificate identifies (often used to identify the website).

- **Valid days**

Enter the period in days (1 to 9999) to indicate the valid period of certificate.

Click on <OK> to save the Certificate Information after complete.

IP Filter

The IP Filter setting can be found under this path: **System> Security> IP Filter**.

With IP Filter, users can allow or deny specific IP addresses from accessing the camera.

- **Enable IP Filter**

Check the box to enable the IP Filter function. Once enabled, the listed IP addresses (IPv4) in the <Filtered IP Addresses> list box will be allowed / denied to access the camera.

Select <Allow> or <Deny> from the drop-down list and click on the <Apply> button to determine the IP filter behavior.

- **Add IP Address**

Input IP address at the blank space below the <Filtered IP Address> list and click <Add>. The newly-added address will be shown in the list. Up to 256 IP address entries can be specified.

In addition, to filter a group of IP addresses, enter an address at the blank space followed with a slash and a number ranging from 1 to 31, ex. 192.168.2.81/30. The number after the slash can define how many IP addresses will be filtered. For details, please refer to the following example.

➢ Example: Filtering a group of consecutive IP addresses

The steps below show what will be filtered when 192.168.2.81/30 is entered.

IEEE 802.1X

The IEEE 802.1X setting can be found under this path: **System> Security> IEEE 802.1X**.

The IP Camera is allowed to access a network protected by 802.1X/EAPOL (Extensible Authentication Protocol over LAN).

Users need to contact with the network administrator for gaining certificates, user IDs and passwords.

CA Certificate

The CA certificate is created by the Certification Authority for the purpose of validating itself. Upload the certificate for checking the server's identity.

Client Certificate / Private Key

Upload the Client Certificate and Private Key for authenticating the IP Camera itself.

Settings

- **Identity**

Enter the user identity associated with the certificate. Up to 16 characters can be used.

- **Private Key Password**

Enter the password (maximum 16 characters) for user identity.

Enable IEEE 802.1X

Check the box to enable IEEE 802.1X.

Click on <Save> to save the IEEE 802.1X/ EAP- TLS setting.

12.3.3 Network

The Network setting can be found under this path: **System> Network**.

Click on the <Network> category, there will be a drop-down menu with tabs including <Basic>, <QoS>, <SNMP> and <UPnP>.

Basic
The Basic setting can be found under this path: **System> Network> Basic**.

Users can choose to connect to the IP Camera with fixed or dynamic (DHCP) IP address. The IP Camera also provides PPPoE support for users who connect to the network via PPP over Ethernet (PPPoE).

General

- **Get IP address automatically (DHCP)**

The camera's default setting is <Use fixed IP address>. Please refer to User's Manual for login with the default IP address.

If select <Get IP address automatically>, after the IP Camera restarts, users can search it through the installer program: DeviceSearch.exe, which can be found in "DeviceSearch" folder in the supplied CD.

NOTE: Please make the record of the IP Camera's MAC address, which can be found in the label of the camera, for identification in the future.

- **Use fixed IP address**

To setup static IP address, select <Use fixed IP address> and move the cursor to the IP address blank and insert the new IP address, ex. 192.168.7.123; then go to the Default gateway (explained later) blank and change the setting, ex. 192.168.7.254. Click on <Save> to confirm the new setting.

When using static IP address to login to the IP Camera, users can access it either through "DeviceSearch" software (refer to User's Manual) or input the IP address in the URL bar and click on <Enter>.

- IP address

This is necessary for network identification.

- Subnet mask

It is used to determine if the destination is in the same subnet. The default value is "255.255.255.0".

- Default gateway

This is the gateway used to forward frames to destinations in different subnet. Invalid gateway setting will fail the transmission to destinations in different subnet.

- Primary DNS

Primary DNS is the primary domain name server that translates hostnames into IP addresses.

- Secondary DNS

Secondary DNS is a secondary domain name server that backups the primary DNS.

Use PPPoE
For the PPPoE users, enter the PPPoE Username and Password into the fields, and click on the <Save> button to complete the setting.

Advanced

- **Web Server port**

The default web server port is 80. Once the port is changed, the user must be notified the change for the connection to be successful. For instance, when the administrator changes the web server port of the IP Camera whose IP address is 192.168.0.10 from 80 to 8080, the user must type in the web browser "http://192.168.0.10:8080" instead of "http://192.168.0.10".

- **RTSP port**

The default setting of RTSP Port is 554; the setting range is from 1024 to 65535.

the command line to get the different video stream are
H.264-1: rtsp://ipaddress/h264
H.264-2: rtsp://ipaddress/h264_2
H.264-3: rtsp://ipaddress/h264_3
H.264-4: rtsp://ipaddress/h264_4
MJPEG: rtsp://ipaddress/jpeg

Please note that the stream needs to be available in the web page configuration.

- **MJPEG over HTTP port**

The default setting of MJPEG over HTTP Port is 8008; the setting range is from 1024 to 65535.

- **HTTPS port**

The default setting of HTTPS Port is 443; the setting range is from 1024 to 65535.

NOTE: Be aware to choose the different port from the one set for the web server port.

IPv6 Address Configuration
With IPv6 support, users can use the corresponding IPv6 address for browsing. Enable IPv6 by checking the box and click on <Save> to complete the setting.

QoS
The QoS (Quality of Service) setting can be found under this path: **System> Network> QoS**.

QoS allows providing differentiated service levels for different types of traffic packets, which guarantees delivery of priority services especially when network congestion occurs. Adapting the Differentiated Services (DiffServ) model, traffic flows are classified and marked with DSCP (DiffServ Codepoint) values, and thus receive the corresponding forwarding treatment from DiffServ capable routers.

DSCP Settings
The DSCP value range is from 0 to 63. The default DSCP value is 0, which means DSCP is disabled. The IP Camera uses the following QoS Classes: Video, Audio and Management.

- **Video DSCP**

The class consists of applications such as MJPEG over HTTP, RTP/RTSP and RTSP/HTTP.

- **Audio DSCP**

This setting is only available for the IP Cameras that support audio.

- **Management DSCP**

The class consists of HTTP traffic: Web browsing.

NOTE: To enable this function, please make sure the switches / routers in the network support QoS.

12.3.4 SNMP

The SNMP (Simple Network Management Protocol) setting can be found under this path: **System> Network> SNMP**.

With Simple Network Management Protocol (SNMP) support, the IP Camera can be monitored and managed remotely by the network management system.

SNMP v1 / v2

- **Enable SNMP v1 / v2**

Select the version of SNMP to use by checking the box.

- **Read Community**

Specify the community name that has read-only access to all supported SNMP objects. The default value is “public”.

- **Write Community**

Specify the community name that has read/write access to all supported SNMP objects (except read-only objects). The default value is “write”.

SNMP v3

SNMP v3 supports an enhanced security system that provides protection against unauthorized users and ensures the privacy of the messages. Users will be requested to enter security name, authentication password and encryption password while setting the camera connections in the network management system. With SNMP v3, the messages sent between the cameras and the network management system will be encrypted to ensure privacy.

- **Enable SNMP v3**

Enable SNMP v3 by checking the box.

- **Security Name**

The maximum length of the security name is 32 characters.

NOTE: The valid characters are A-Z, a-z, 0-9, !#$%&’-.@^_~.

- **Authentication Type**

There are two authentication types available: MD5 and SHA. Select SHA for a higher security level.

- **Authentication Password**

The authentication password must be 8 characters or more. The input characters / numbers will be displayed as dots for security purposes.

NOTE: The valid characters are A-Z, a-z, 0-9, !#$%&’-.@^_~.

- **Encryption Type**

There are two encryption types available: DES and AES. Select AES for a higher security level.

- **Encryption Password**

The minimum length of the encryption password is 8 characters and the maximum length is 512 characters. The input characters / numbers will be displayed as dots for security purposes. The encryption password can also be left blank. However, the messages will not be encrypted to protect privacy.

NOTE: The valid characters are A-Z, a-z, 0-9, !#$%&’-.@^_~.

Traps for SNMP v1 **/ v2 / v3**
Traps are used by the IP Camera to send massages to a management system for important events or status changes.

- **Enable Traps**

Check the box to activate trap reporting.

- **Trap address**

Enter the IP address of the management server.

- **Trap community**

Enter the community to use when sending a trap message to the management system.

Trap Option

- **Warm Start**

A Warm Start SNMP trap signifies that the SNMP device, i.e. IP Camera, performs software reload.

Click on <Save> when finished.

12.3.5 UPnP

The UPnP setting can be found under this path: System> Network> UPnP.

UPnP Setting

- **Enable UPnP**

When the UPnP is enabled, whenever the IP Camera is presented to the LAN, the icon of the connected IP Cameras will appear in My Network Places to allow for direct access.

NOTE: To enable this function, please make sure the UPnP component is installed on the computer..

- **Enable UPnP port forwarding**

When the UPnP port forwarding is enabled, the IP Camera is allowed to open the web server port on the router automatically.

NOTE: To enable this function, please make sure that the router supports UPnP and it is activated.

- **Friendly name**

Set the name for the IP Camera for identity.

Click on <Save> when finished.

12.3.6 DDNS

The DDNS setting can be found under this path: **System> DDNS.**

Dynamic Domain Name System (DDNS) allows a host name to be constantly synchronized with a dynamic IP address. In other words, it allows those using a dynamic IP address to be associated to a static domain name so others can connect to it by name.

Enable DDNS
Check the item to enable DDNS.

Provider
Select one DDNS host from the provider list.

Host name
Enter the registered domain name in the field.

Username/E-mail
Enter the username or E-mail required by the DDNS provider for authentication.

Password/Key
Enter the password or key required by the DDNS provider for authentication.

Click on <Save> when finished.

12.3.7 Mail

The Mail setting can be found under this path: **System> Mail.**

The administrator can send an E-mail via Simple Mail Transfer Protocol (SMTP) when event is triggered. SMTP is a protocol for sending E-mail messages between servers. SMTP is a relatively simple, text-based protocol, where one or more recipients of a message are specified and the message text is transferred.

Two sets of SMTP can be configured. Each set includes SMTP Server, Server Port, Account Name, Password and E-mail Address settings. Check the box “SMTP SSL” to send E-mails via encrypted transmission. For SMTP server, contact the network service provider for more specific information.

Click on <Save> when finished.

12.3.8 FTP

The FTP setting can be found under this path: **System> FTP.**

The administrator can set camera to send an alarm message to a specific File Transfer Protocol (FTP) site when event is triggered. Users can assign alarm message to up to two FTP sites. Enter the FTP details, which include server, server port, user name, password and remote folder, in the fields. Check the box “passive mode” to be connected with the FTP server by passively receiving the FTP server’s IP address through a dynamic port. Alternatively, uncheck the box to directly connect the FTP server via active mode.

Click on <Save> when finished.

12.3.9 HTTP

The HTTP setting can be found under this path: **System> HTTP**.

A HTTP Notification server can listen for notification messages from IP Cameras by triggered events. Enter the HTTP details, which include server name (for instance, http://192.168.0.10/admin.php), user name, and password in the fields. <Alarm> triggered and <Motion Detection> notifications can be sent to the specified HTTP server.

Click on <Save> when finished.

Please refer to Events> Application> Send HTTP notification / Motion Detection for HTTP Notification settings.

12.3.10 Events

The Events setting can be found under this path: **System> Events**.

Click on the Events category, there will be a drop-down menu with tabs including <Application>, <Motion Detection>, <Network Failure Detection>, <Tampering> and <Periodical Event>.

12.3.11 Application

The Application setting can be found under this path: **System> Application**.

The IP Camera supports one alarm input and one relay output for cooperation with alarm system to capture event images. Refer to alarm pin definition below to connect alarm devices to the IP Camera if needed.

Alarm Pin Definition
Please refer to 8.3 Connect Alarm I/O for Alarm Pin Definition to connect the alarm devices.

Alarm Switch
The default setting for the Alarm Switch function is <Off>. Enable the function by selecting <On>. Users can also activate the function according to the schedule previously set in the <Schedule> setting page. Select <By schedule> and click <Please select…> to choose the desired schedule from the drop-down menu.

Alarm Type
Select an alarm type, <Normal close> or <Normal open>, that corresponds with the alarm application.

Alarm Output
Define alarm output signal <high> or <low> as the normal alarm output status according to the current alarm application.

Triggered Action (Multi-option)
The administrator can specify alarm actions that will take when the alarm is triggered. All options are listed as follows.

- **Enable Alarm Output**

Select the item to enable alarm relay output.

- **IR Cut Filter**

Select the item and the IR cut filter (ICR) of the camera will be removed (on) or blocked (off) when an alarm input is triggered.

Note: The IR Function (Refer to IR Function) could not be set as <Auto> mode if this triggered action is enabled.

- **Send Message by FTP/E-mail**

The administrator can select whether to send an alarm message by FTP and/or E-mail when an alarm is triggered.

- **Upload Image by FTP**

Select this item and the administrator can assign a FTP site and configure various parameters. When the alarm is triggered, event images will be uploaded to the appointed FTP site.

<Pre-trigger buffer> function allows users to check what happened to cause the trigger. The <Pre-trigger buffer> frame rate could be pre-determined. On the other hand, <Post-trigger buffer> is for users to upload certain amount of images after the alarm input is triggered.

NOTE: Normally the setting range of the <Pre-trigger buffer> is 1 to 20. However, the setting range will change accordingly if the frame rate of MJPEG on the <Video Frame Rate> setting page is 6 or smaller.

Check the box <Continue image upload> to upload the triggered images during certain time or keep uploading until the trigger is off. Select <Upload for __ sec> and enter the duration in the blank. The images of the duration will be uploaded to FTP when the alarm input is triggered. The setting range is from 1 to 9999 seconds. Select <Upload during the trigger active> to make the images keep being uploaded to FTP during the trigger active until the alarm is released. Set the Image frequency as the upload frame rate. The setting range is from 1 frame to 15 frames.

NOTE: Make sure FTP configuration has been completed. Refer to FTP for further details.

- **Upload Image by E-mail**

Select this item and the administrator can assign an E-mail address and configure various parameters. When the alarm input is triggered, event images will be sent to the appointed E-mail address.

<Pre-trigger buffer> function allows users to check what happened to cause the trigger. The <Pre-trigger buffer> frame rate could be pre-determined. On the other hand, <Post-trigger buffer> is for users to upload certain amount of images after alarm input is triggered.

NOTE: Normally the setting range of the <Pre-trigger buffer> is 1 to 20. However, the setting range will change accordingly if the frame rate of MJPEG on the <Video Frame Rate> setting page is 6 or smaller.

Check the box <Continue image upload> to upload the triggered images during certain time or keep uploading until the trigger is off. Select <Upload for __ sec> and enter the duration in the blank. The images of the duration will be uploading by E-mail when the alarm input is triggered. The setting range is from 1 to 9999 seconds. Select <Upload during the trigger active> to make the images keep being uploaded to E-mail during the trigger active until the alarm is released. Set the Image frequency as the upload frame rate. The setting range is from 1 frame to 15 frames.

NOTE: Make sure SMTP configuration has been completed. Refer to Mail for further details.

- **Send HTTP notification**

Check this item and select the destination HTTP address. Then specify the parameters for event notifications by <Alarm> triggered. When an alarm is triggered, the HTTP notification will be sent to the specified HTTP server.

For instance, if the custom parameter is set as “action=1&group=2”, and the HTTP server name is “http://192.168.0.10/admin.php”, the notification will be sent to HTTP server as “http://192.168.0.10/admin.php? action=1&group=2” when alarm is triggered.

- **Record to Video Clip**

Select the item and the alarm-triggered recording will be saved into the microSD card.

Pre-trigger buffer recording function allows users to check what happened to cause the trigger. The pre-trigger buffer time range is from 1 to 3 seconds.

Select <Upload for __ sec> to set the recording duration after alarm is triggered. The setting range is from 1 to 99999 seconds.

Select <Upload during the trigger active> to record the triggered video until the trigger is off.

NOTE: Please make sure the local recording (with microSD / SDHC card) is activated so that this function can be implemented.

File Name
Enter a file name in the blank, ex. image.jpg. The file name format of the uploaded image can be set in this section. Please select the one that meets the requirements.

- **Add date/time suffix**

File name: imageYYMMDD_HHNNSS_XX.jpg
Y: Year, M: Month, D: Day
H: Hour, N: Minute, S: Second
X: Sequence Number

- **Add sequence number suffix (no maximum value)**

File name: imageXXXXXXX.jpg
X: Sequence Number

- **Add sequence number suffix up to # and then start over**

File Name: imageXX.jpg
X: Sequence Number

The file name suffix will end at the number being set. For example, if the setting is up to “10”, the file name will start from 00, end at 10, and then start all over again.

- **Overwrite**

The original image in the FTP site will be overwritten by the new uploaded file with a static filename.

Save
After complete all the settings mentions above, please click on <Save> button to save all the settings in this page.

12.3.12 Motion Detection

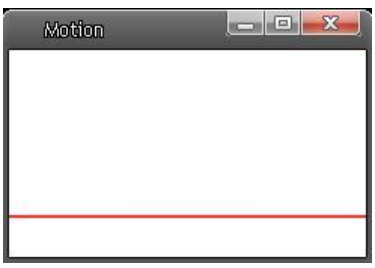
The Motion Detection setting can be found under this path: **System> Motion Detection**.

Motion Detection function allows detecting suspicious motion and triggering alarms when motion volume in the detected area reaches / exceeds the determined sensitivity threshold value.

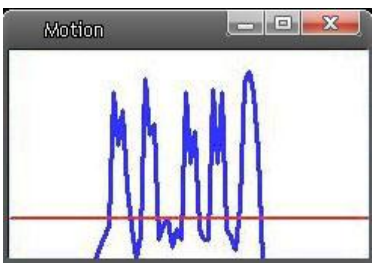
The function supports up to 4 sets of Motion Detection settings. Settings can be chosen from the drop-down menu beside <Motion Detection>. In each set of setting, there is a **Motion Detection Window** (the red frame shown in the figure below) displayed on the Live Video Pane. The Motion Detection Window is for defining the motion detection area. To change the size of the Motion Detection Window, move the mouse cursor to the edge of the window and draw it outward / inward. To shift the window to the intended location, move the mouse cursor to the center of the window and click and drag.

Users can configure up to 10 sets of Motion Detection Windows in each set of Motion Detection setting. Click on the <add> button under the Live Video Pane to add a Motion Detection Window. To cancel a Motion Detection Window, move the mouse cursor to the selected window, and click on the <delete> button.

If Motion Detection function is activated, the pop-off window (Motion) with indication of motion will be shown.



When motion is detected, the signals will be displayed on the Motion window as shown below. Motion is detected by comparing sampling pixels in the detection areas of two consecutive live images.



Motion Detection

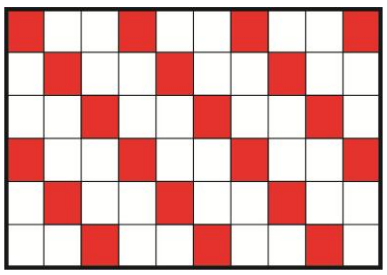
In each set of Motion Detection setting, the default setting for the Motion Detection function is <Off>. Enable the function by selecting <On>. Users can also activate the function according to the schedule previously set in the <Schedule> setting page. Select <By schedule> and click <Please select…> to choose the desired

schedule from the drop-down menu.

Motion Detection Setting
Users could adjust various parameters of Motion Detection in this section.

- **Sampling pixel interval [1-10]:**

This item is for users to define the intervals between the sampling pixels. The default value is 1. If the value is set as 3, it means within the detection region, system will take the first pixel as the sample from every 3 pixels by each row and each column (refer to the figure below).



- **Detection level [1-100]:**

The item is to set detection level for each sampling pixel; the smaller the value, the more sensitive it is. The default level is 10.

- **Sensitivity level [1-100]:**

The default level is 80, which means if 20% or more sampling pixels are detected differently, system will detect motion. The bigger the value, the more sensitive it is. Meanwhile, when the value is bigger, the red horizontal line in the motion indication window will be lower accordingly.

- **Time interval (sec) [0-7200]:**

The value is the interval between each detected motion. The default interval is 10.

Triggered Action (Multi-option)
The administrator can specify alarm actions that will take when motion is detected. All options are listed as follows.

- **Enable Alarm Output**

Check the item and select the predefined type of alarm output to enable alarm relay output when motion is detected.

- **Record Video Clip**

Select this item and the Motion Detection recording will be stored in microSD / SDHC card when motion is detected.

Pre-trigger buffer recording function allows users to check what happened to cause the trigger. The pre-trigger buffer time range is from 1 to 3 seconds.

Select <Upload for __ sec> to set the recording duration after motion event occurs. The setting range is from 1 to 99999 seconds.

Select <Upload during the trigger active> to record the triggered video until the trigger is off.

NOTE: Please make sure the local recording (with microSD / SDHC card) is activated so that this function can be implemented. Refer to Recording for further details.

- **Send Alarm Message by FTP/E-mail**

The administrator can select whether to send warning messages by FTP and/or E-mail when motion is detected.

- **Upload Image by FTP**

Select this item and the administrator can assign a FTP site and configure various parameters. When motion is detected, event images will be uploaded to the appointed FTP site.

<Pre-trigger buffer> function allows users to check what happened to cause the trigger. The <Pre-trigger buffer> frame rate could be pre-determined. On the other hand, <Post-trigger buffer> is for users to upload certain amount of images after motion event occurs.

NOTE: Normally the setting range of the <Pre-trigger buffer> is 1 to 20. However, the setting range will change accordingly if the frame rate of MJPEG on the <Video Frame Rate> setting page is 6 or smaller.

Check the box <Continue image upload> to upload the triggered images during certain time or keep uploading until the trigger is off. Select <Upload for __ sec> and enter the duration in the blank. The images of the duration will be uploaded to FTP when the motion event occurs. The setting range is from 1 to 9999 seconds. Select <Upload during the trigger active> to make the images keep being uploaded to FTP during the trigger active until the event stops. Set the Image frequency as the upload frame rate. The setting range is from 1 frame to 15 frames.

NOTE: Make sure FTP configuration has been completed. Refer to FTP for further details.

- **Upload Image by E-mail**

Select this item and the administrator can assign an E-mail address and configure various parameters. When motion is detected, event images will be sent to the appointed E-mail address.

<Pre-trigger buffer> function allows users to check what happened to cause the trigger. The <Pre-trigger buffer> frame rate could be pre-determined. On the other hand, <Post-trigger buffer> is for users to upload certain amount of images after the motion event occurs.

NOTE: Normally the setting range of the <Pre-trigger buffer> is 1 to 20. However, the setting range will change accordingly if the frame rate of MJPEG on the <Video Frame Rate> setting page is 6 or smaller.

Check the box <Continue image upload> to upload the triggered images during certain time or keep uploading until the trigger is off. Select <Upload for __ sec> and enter the duration in the blank. The images of the duration will be uploading by E-mail when the motion event occurs. The setting range is from 1 to 9999 seconds. Select <Upload during the trigger active> to make the images keep being uploaded to E-mail during the trigger active until the event stops. Set the Image frequency as the upload frame rate. The setting range is from 1 frame to 15 frames.

NOTE: Make sure SMTP configuration has been completed. Refer to Mail for further details.

- **Send HTTP notification**

Check this item and select the destination HTTP address. Then specify the parameters for event notifications by <Motion Detection> triggered. When a motion is detected, the HTTP notification will be sent to the specified HTTP server.

For instance, if the custom parameter is set as “action=1&group=2”, and the HTTP server name is “http://192.168.0.10/admin.php”, the notification will be sent to HTTP server as “http://192.168.0.10/admin.php? action=1&group=2” when alarm is triggered.

File Name
Enter a file name in the blank, ex. image.jpg. The file name format of the uploaded image can be set in this section. Please select the one that meets the requirements.

- **Add date/time suffix**

File name: imageYYMMDD_HHNNSS_XX.jpg
Y: Year, M: Month, D: Day, H: Hour, N: Minute, S: Second
X: Sequence Number

- **Add sequence number suffix (no maximum value)**

File name: imageXXXXXXX.jpg
X: Sequence Number

- **Add sequence number suffix up to # and then start over**

File Name: imageXX.jpg
X: Sequence Number

The file name suffix will end at the number being set. For example, if the setting is up to “10”, the file name will start from 00, end at 10, and then start all over again.

- **Overwrite**

The original image in the FTP site will be overwritten by the new uploaded file with a static filename.

Save
Click the <Save> button to save all the Motion Detection settings mentioned above.

12.3.13 Network Failure Detection

Network Failure Detection allows the IP Camera to ping another IP device (e.g. NVR, VSS, Video Server, etc.) within the network periodically and generates some actions in case of network failure occurs, for instance, a Video Server is somehow disconnected.

Being capable of implementing local recording (through microSD card) when network failure happens, the IP Camera could be a backup recording device for the surveillance system.

Detection Switch
The default setting for the Detection Switch function is <Off>. Enable the function by selecting <On>. Users can also activate the function according to the schedule time that is previously set in the <Schedule> setting page. Select <By schedule> and click <Please select…> to choose the desired schedule from the drop-down menu.

Detection Type
Input the IP device address and the period of ping time to ping. The ping time setting range is from 1 to 99 minutes.

Triggered Action (Multi-option)
The administrator can specify alarm actions that will take when network failure is detected. All options are listed as follows.

- **Enable Alarm Output**

Select the item to enable alarm relay output.

- **Record Video Clip**

Select the item and the alarm-triggered recording will be saved into the microSD card.

Pre-trigger buffer recording function allows users to check what happened to cause the trigger. The pre-trigger buffer time range is from 1 to 3 seconds. Select <Upload for __ sec> to set the recording duration after alarm is triggered. The setting range is from 1 to 99999 seconds. Select <Upload during the trigger active> to record the triggered video until the trigger is off.

NOTE: Please make sure the local recording (with microSD / SDHC card) is activated so that this function can be implemented. Refer to Recording for further details.

- **Send Alarm Message by FTP/E-mail**

The administrator can select whether to send an alarm message by FTP and/or E-mail when an alarm is triggered.

Save
Click the <Save> button to save all the settings mentioned above.

12.3.14 Tampering

The Tampering setting can be found under this path: **System> Tampering**.

Tampering Alarm function helps the IP Camera against tampering such as deliberate redirection, blocking, paint spray, and lens cover, etc through video analysis and reaction to such events by sending out notifications or uploading snapshots to the specified destination(s).

Detection of camera tampering is achieved by measuring the differences between the older frames of video (which are stored in buffers) and more recent frames.

Tampering Alarm
The default setting for the Tampering Alarm function is <Off>. Enable the function by selecting <On>. Users can also activate the function according to the schedule previously set in the <Schedule> setting page. Select <By schedule> and click <Please select…> to choose the desired schedule from the drop-down menu.

Tampering Duration
Minimum Tampering Duration is the time for video analysis to determine whether camera tampering has occurred. Minimum Duration could also be interpreted as defining the Tampering threshold; longer duration represents higher threshold. Settable Tampering Duration time range is from 10 to 3600 seconds. The Default value is 20 seconds.

Triggered Action (Multi-option)
The administrator can specify alarm actions that will take when tampering is detected. All options are listed as follows.

- **Enable Alarm Output**

Check the item and select the predefined type of alarm output to enable alarm output when tampering is detected.

- **Record Video Clip**

Select this item and the Tampering Alarm recording will be stored in microSD / SDHC card when tampering is detected.

Pre-trigger buffer recording function allows users to check what happened to cause the trigger. The pre-trigger buffer time range is from 1 to 3 seconds.

Select <Upload for __ sec> to set the recording duration after tampering occurs. The setting range is from 1 to 99999 seconds.

Select <Upload during the trigger active> to record the triggered video until the trigger is off.

NOTE: Please make sure the local recording (with microSD / SDHC card) is activated so that this function can be implemented. Refer to Recording for further details.

- **Send Message by FTP/E-mail**

The administrator can select whether to send an alarm message by FTP and/or E-mail when tampering is detected.

- **Upload Image by FTP**

Select this item and the administrator can assign a FTP site and configure various parameters. When tampering is detected, event images will be uploaded to the appointed FTP site.

<Pre-trigger buffer> function allows users to check what happened to cause the trigger. The <Pre-trigger buffer> frame rate could be pre-determined. On the other hand, <Post-trigger buffer> is for users to upload certain amount of images after tampering is triggered.

NOTE: Normally the setting range of the <Pre-trigger buffer> is 1 to 20. However, the setting range will change accordingly if the frame rate of MJPEG on the <Video Frame Rate> setting page is 6 or smaller.

Check the box <Continue image upload> to upload the triggered images during certain time or keep uploading until the trigger is off. Select <Upload for __ sec> and enter the duration in the blank. The images of the duration will be uploaded to FTP when tampering is triggered. The setting range is from 1 to 9999 seconds. Select <Upload during the trigger active> to make the images keep being upload to FTP during the trigger active until the tampering stops. Set the Image frequency as the upload frame rate. The setting range is from 1 frame to 15 frames.

NOTE: Make sure FTP configuration has been completed. Refer to FTP for further details.

- **Upload Image by E-mail**

Select this item and the administrator can assign an E-mail address and configure various parameters. When tampering is detected, event images will be sent to the appointed E-mail address.

<Pre-trigger buffer> function allows users to check what happened to cause the trigger. The <Pre-trigger buffer> frame rate could be pre-determined. On the other hand, <Post-trigger buffer> is for users to upload certain amount of images after tampering occurs.

NOTE: Normally the setting range of the <Pre-trigger buffer> is 1 to 20. However, the setting range will change accordingly if the frame rate of MJPEG on the <Video Frame Rate> setting page is 6 or smaller.

Check the box <Continue image upload> to upload the triggered images during certain time or keep uploading until the trigger is off. Select <Upload for __ sec> and enter the duration in the blank. The images of the duration will be uploading by E-mail when tampering is triggered. The setting range is from 1 to 9999 seconds. Select <Upload during the trigger active> to make the images keep being upload to E-mail during the trigger active until tampering stops. Set the Image frequency as the upload frame rate. The setting range is from 1 frame to 20 frames.

NOTE: Make sure SMTP configuration has been completed. Refer to Mail for further details.

- **Send HTTP notification**

Check this item, select the destination HTTP address, and specify the parameters for HTTP notifications. When the Tampering Alarm is triggered, the HTTP notifications can be sent to the specified HTTP server.

For instance, if the custom parameter is set as "action=1&group=2", and the HTTP server name is "http://192.168.0.10/admin.php", the notification will be sent to HTTP server as "http://192.168.0.10/admin.php? action=1&group=2" when alarm is triggered.

File Name

Enter a file name in the blank, ex. image.jpg. The uploaded image's file name format can be set in this section. Please select the one that meets the requirements.

- **Add date/time suffix**

File name: imageYYMMDD_HHNNSS_XX.jpg
Y: Year, M: Month, D: Day
H: Hour, N: Minute, S: Second
X: Sequence Number

- **Add sequence number suffix (no maximum value)**

File name: imageXXXXXXX.jpg
X: Sequence Number

- **Add sequence number suffix up to # and then start over**

File Name: imageXX.jpg
X: Sequence Number

The file name suffix will end at the number being set. For example, if the setting is up to "10", the file name will start from 00, end at 10, and then start all over again.

- **Overwrite**

The original image in the FTP site will be overwritten by the new uploaded file with a static filename.

Save

Click on <Save> to save all the settings mentioned above.

12.3.15 Periodical Event

The Periodical Event setting can be found under this path: **System> Periodical Event**.

With Periodical Event setting, users can set the camera to upload images periodically to a FTP site or an E-mail address. For example, if the time interval is set to 60 seconds, the camera will upload images to the assigned FTP site or E-mail address every 60 seconds. The images to be uploaded are the images before and after the triggered moment. Users can define how many images to be uploaded in the <Triggered Action> section of this setting page.

Periodical Event
The default setting for the Periodical Event function is <Off>. Enable the function by selecting <On>.

Time Interval
The default value of the time interval is 60 seconds. The setting range of the time interval is from 60 to 3600 seconds

Triggered Action

- **Upload Image by FTP**

Select this item and the administrator can assign a FTP site and configure various parameters. Images will be uploaded to the appointed FTP site periodically.

The <Pre-trigger buffer> function can define how many images to be uploaded before the triggered moment. The <Post-trigger buffer> function can define how many images to be uploaded after the triggered moment.

NOTE: Normally the setting range of the <Pre-trigger buffer> is 1 to 20. However, the setting range will change accordingly if the frame rate of MJPEG on the <Video Frame Rate> setting page is 6 or smaller.

NOTE: Make sure FTP configuration has been completed. Refer to the FTP section of this chapter for further details.

- **Upload Image by E-mail**

Select this item and the administrator can assign an e-mail address and configure various parameters. Images will be uploaded to the appointed e-mail address periodically.

The <Pre-trigger buffer> function can define how many images to be uploaded before the triggered moment. The <Post-trigger buffer> function can define how many images to be uploaded after the triggered moment.

NOTE: Normally the setting range of the <Pre-trigger buffer> is 1 to 20. However, the setting range will change accordingly if the frame rate of MJPEG on the <Video Frame Rate> setting page is 6 or smaller.

NOTE: Make sure SMTP configuration has been completed. Refer to the Mail section of this chapter for further details.

File Name
Enter a file name in the blank, ex. image.jpg. The uploaded image's file name format can be set in this section. Please select the one that meets the requirements.

- **Add date/time suffix**

File name: imageYYMMDD_HHNNSS_XX.jpg
Y: Year, M: Month, D: Day, H: Hour, N: Minute, S: Second
X: Sequence Number

- **Add sequence number suffix (no maximum value)**

File name: imageXXXXXXX.jpg
X: Sequence Number

12.3.16 Storage Management (Local Recording)

The Storage Management setting can be found under this path: **System> Storage Management**.

Users can implement local recording to the microSD / SDHC card up to 32GB. This page shows the capacity information of the microSD card and a recording list with all the recording files saved on the memory card. Users can also format the SD card and implement automatic recording cleanup through the setting page.

To implement microSD card recording, please go to the <Recording> page (refer to Recording) for activation.

NOTE: Please format the microSD / SDHC card when using for the first time. Formatting will also be required when a memory card already being used on one camera and later transferred to another camera with different software platform.

Device information
When users insert the microSD / SDHC card, the card information such as the memory capacity and status will be shown at Device Information section.

For the memory card being successfully installed, its status shall be shown at <Device information> section in the Storage Management page.

Device setting
Click on the <Format> button to format the memory card.

Disk cleanup setting
Users can enable automatic recordings cleanup by specifying the time and storage limits.

Recording List
Each video file on the microSD / SDHC card will be listed in the Recording list. The maximum file size is 60 MB (60 MB per file). When the recording mode is set as “Always” (consecutive recording) and the microSD / SDHC card recording is also allowed to be enabled by events triggered. Once events occurred, the system will immediately implement events recording to the memory card. Then the IP Camera will return to the regular recording mode after events recording.

- **Remove**

To remove a file, select the file first, and then click on the <Remove> button.

- **Sort**

Click on the <Sort> button, and the files in the Recording list will be listed in name and date order.

NOTE: The capital letter A / M / R / T appears in the very beginning of name denotes the sort of the recording: A stands for Alarm; M stands for Motion; R stands for regular recording, and T stands for Tampering.

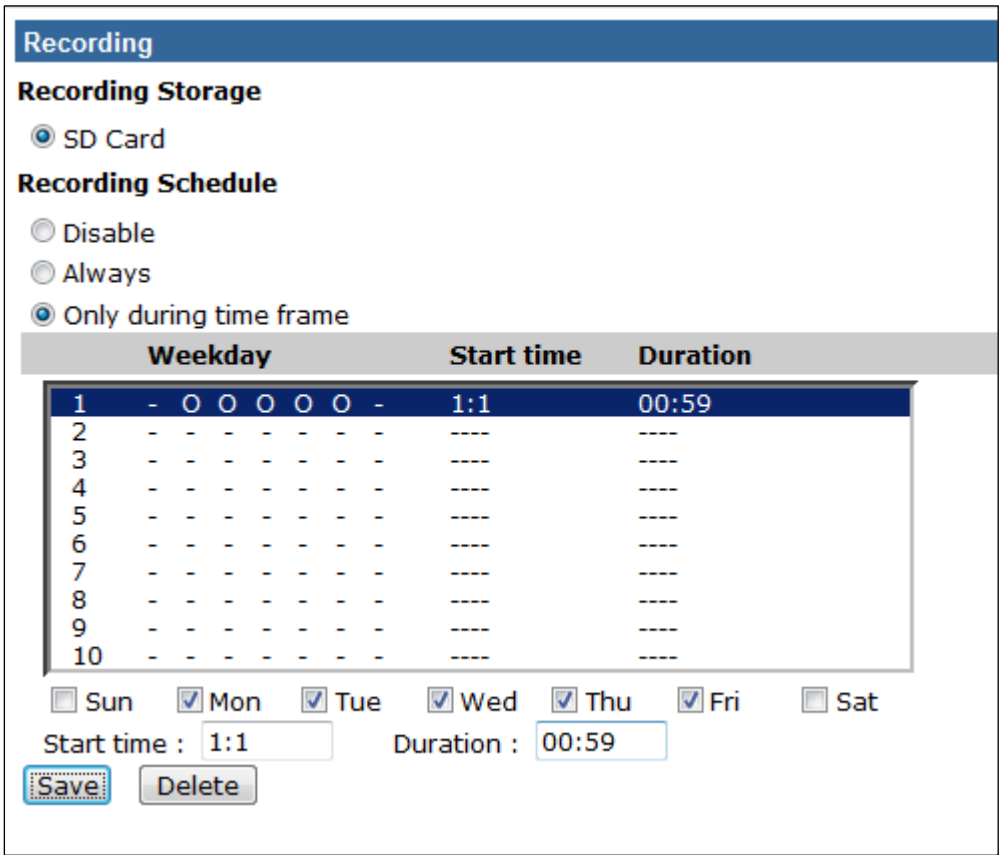
- **Download**

To open / download a video clip, select the file first, and then click on the <download> button below the Recording list field. The selected file window will popup. Click on the AVI file to directly play the video in the player or download it to a specified location.

12.3.17 Recording (Local Recording)

The Recording setting can be found under this path: **System> Recording**.

In the Recording setting page, the microSD card recording schedule supports up to ten sets of time frames. User can specify the recording schedule to fit the present surveillance requirement.


Recording
Recording Storage
SD Card
Recording Schedule
Disable
Always
Only during time frame
Weekday
Start time
Duration
1 - O O O O O - 1:1 00:59
2 - - - - - - - ---- ----
3 - - - - - - - ---- ----
4 - - - - - - - ---- ----
5 - - - - - - - ---- ----
6 - - - - - - - ---- ----
7 - - - - - - - ---- ----
8 - - - - - - - ---- ----
9 - - - - - - - ---- ----
10 - - - - - - - ---- ----
Sun Mon Tue Wed Thu Fri Sat
Start time : 1:1
Duration : 00:59
Save
Delete

Activating microSD / SDHC Card Recording

Two types of schedule mode are offered: <Always> and <Only during time frame>. Users can select <Always> to activate microSD / SDHC card recording all the time. Or select a set of schedule from the time frame blank, check specific weekdays and setup the start time (hour:minute) and time period (hour:minute) to activate microSD / SDHC card recording at certain time frames. The setting range for time period hour is from 0 to 168. Please click on <Save> to save the setup.

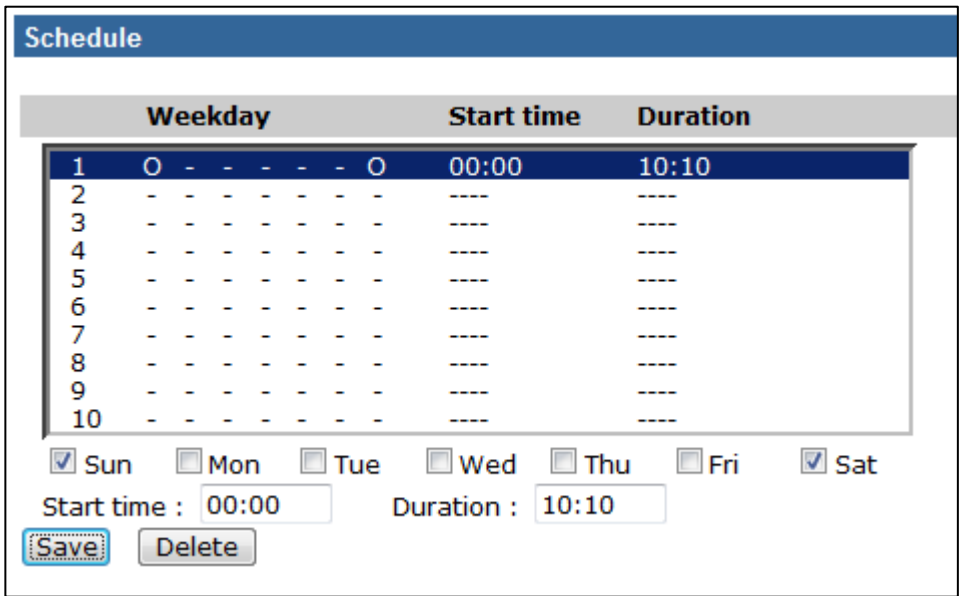
Terminating microSD / SDHC Card Recording

Select <Disable> to terminate the recording function.

12.3.18 Schedule

The Schedule setting can be found under this path: **System> Schedule**.

This function allows the users to setup schedules for features including: <Alarm Switch>, <Motion Detection>, <Network Failure Detection> and <Tampering>. The function supports up to 10 sets of time frames in the time frame list.


Schedule
Weekday
Start time
Duration
1 O - - - - - O 00:00 10:10
2 - - - - - - - ---- ----
3 - - - - - - - ---- ----
4 - - - - - - - ---- ----
5 - - - - - - - ---- ----
6 - - - - - - - ---- ----
7 - - - - - - - ---- ----
8 - - - - - - - ---- ----
9 - - - - - - - ---- ----
10 - - - - - - - ---- ----
Sun
Mon
Tue
Wed
Thu
Fri
Sat
Start time : 00:00
Duration : 10:10
Save
Delete

Setting Schedules

To set a schedule, please select a time frame from the time frame list first. Then check the boxes from below to choose the specific weekdays. At last, type in the start time (hour:minute) and the duration time (hour:minute) for activation of the schedule triggered features. The setting range for the duration time is from 00:00 to 168:59. Click <Delete> to delete a chosen time frame. Please click on <Save> to save the setup.

NOTE: Users **MUST** select <By schedule> under each feature setting page to enable the schedule function.

12.3.19 File Location (Snapshots and Web Recording)

The File Location setting can be found under this path: **System> File Location**.

Users can specify a storage location on the PC or in the hard drive for the snapshots and live video recording. The default setting is: C:\. Once confirm the setting, click on <Save>, and all the snapshots and web recording will be saved in the designate location.

NOTE: Please make sure the selected file path contains valid characters such as letters and numbers.

NOTE: For users with Windows 7 operating system, it is required to log on as an administrator to implement the Snapshot and Web Recording function.

12.3.20 View Information

The View Information function can be found under this path: **System> View Information**.

Click on the category: <View Information>, there will be a drop-down menu with tabs including <Log File>, <User Information> and <Parameters>.

Log File
The Log File function can be found under this path: **System> View Information> Log File**.

Click on the tab to view the system log file. The content of the file provides useful information about connections after system boot-up.

User Information
The User Information function can be found under this path: **System> View Information> User Information**.

The administrator can view each added user's login information and privileges (refer to Security).

Get User Information
All the users in the network will be listed in the <User information> zone as shown below.
User: 4321
It indicates that one user's login username is "User", and the password is "4321".

Get User Privacy
Click on <get user privacy> at the bottom of the page, and the administrator can view each user's privileges as shown below.
User: 1:1:0:1
1:1:0:1= I/O access : Camera control : Talk : Listen (refer to Security)

Therefore, it denotes the user is granted privileges of I/O access, Camera control and Listen.

Parameters
The Parameters function can be found under this path: **System> View Information> Parameter**.

Click on this item to view the parameter setting of the entire system, such as Camera Settings, Mask Information and Network Information.

12.3.21 Factory Default

The Factory Default setting can be found under this path: **System> Factory Default**.

Users can follow the instructions on this page to reset the IP Camera to factory default setting if needed.

Full Restore
Click on <Full Restore> to recall the factory default settings. The system will restart in 30 seconds. The IP address will be restored to default. After the system is restarted, reconnect the camera using the default IP address. The default IP address is **192.168.0.10**.

Partial Restore
Click on <Partial Restore> to recall the factory default settings. The system will restart in 30 seconds. Refresh the browser page after the system is restarted.

NOTE: The IP address will not be restored to default.

Reboot
Click on <Reboot> and the system will restart without changing current settings. Refresh the browser page after the system is restarted.

12.3.22 Software Version

The Software Version can be found under this path: **System> Software Version**. The current software version is displayed in the software version page.

12.3.23 Software Upgrade

The Software Upgrade setting can be found under this path: **System> Software Upgrade**.

NOTE: Make sure the upgrade software file is available before carrying out software upgrade.

The procedure of software upgrade is as below.

Step 1. Click on <Browse> and locate the upgrade file, for example “uImage_userland”.

NOTE: Do not change the upgrade file name, or the system will fail to find the file.

Step 2. Pick a file type from the drop-down list. In this case, select “uImage+userland.img”

Step 3. Click on the <Upgrade> button. Then the system will prepare to start the software upgrade. Subsequently, an upgrade status bar will be displayed on the page to show the current upgrade process. After the upgrade process is finished, the viewer will return to home page.

Step 4. Close the video browser.

Step 5. Click on <Start> and enter the <Control Panel>. In the appeared window, double click on <Add or Remove Programs>. A window with the <Cur-

rently install programs> list will popup. In the list, select <SiemensViewer> and click on <Remove> to uninstall the existing Siemens Viewer.

Step 6. Open a new web browser and re-login the camera. Users will be prompted to download the Siemens Viewer. Once the Siemens Viewer is downloaded and installed, the live video will be available.

12.3.24 Maintenance

The Maintenance setting can be found under this path: **System> Maintenance**.

Users can export configuration files to a specified location and retrieve data by uploading an existing configuration file to the IP Camera.

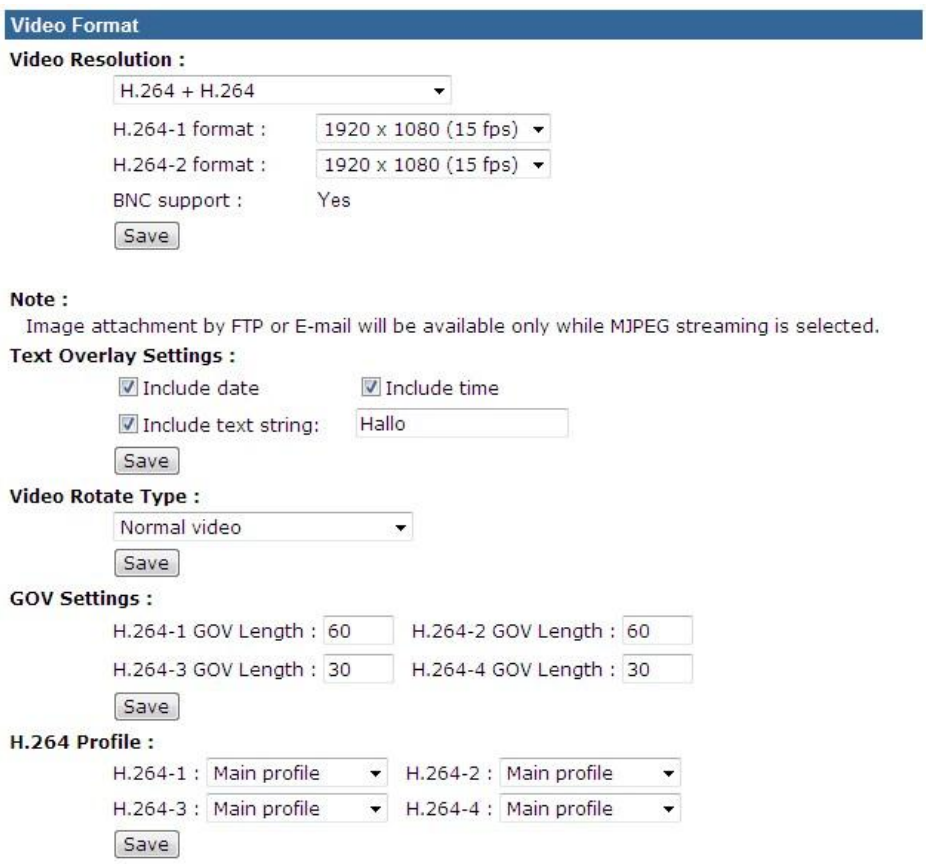
Export Files
Users can save the system settings by exporting the configuration file (.bin) to a specified location for future use. Click on the <Export> button, and the popup File Download window will come out as shown below. Click on <Save> and specify a desired location for saving the configuration file.

Upload Files
To upload an existing configuration file to the IP Camera, please first click on <Browse> to select the configuration file, and then click on the <Upload> button for uploading.

12.4 Main Tab “Streaming”

Under the tab <**Streaming**>, there are submenus including: <Video Format>, <Video Compression>, <Video ROI>, <Video OCX Protocol>, <Video Frame Rate>, <Video Mask> and <Audio>.

In the Streaming submenus, the administrator can configure specific video resolution, video compression mode, video protocol, audio transmission mode, etc. Further details of these settings will be specified in the following sections.



12.4.1 Format (Video Resolution and Rotate Type)

The Video Format setting can be found under this path: **Streaming> Video Format**.

Video Resolution
Under Video Resolution section, the available video resolution formats are including MJPEG and H.264. Please refer to chapter Appendix: Video Resolution - set-ups for more combination details.

Click on <Save> to confirm the setting.

Text Overlay Settings
Users can select the items to display data including date / time / text on the live video pane. The maximum length of the string is 20 alphanumeric characters.

Click on <Save> to confirm the Text Overlay setting.

Video Rotate Type
Users can change video display type if necessary. Selectable video rotate types include Normal, Flip, Mirror, 90 degree clockwise, 180 degree rotate and 90 degree counterclockwise.

The following is descriptions for different video rotate type.

- **Flip**

If select <Flip>, the image will be rotated vertically.

- **Mirror**

If select <Mirror>, the image will be rotated horizontally.

- **90 Degree counter-/clockwise**

Selecting <90 Degree Counter-/clockwise> will make the image 90° counter-/clockwise inversed.

- **180 Degree Rotate**

Selecting <180 Degree> will make the image 180° inversed.

Click on <Save> to confirm the setting.

GOV Settings
Users can set the GOV length to determine the frame structure (I-frames and P-frames) in a video stream for saving bandwidth. Less bandwidth is needed if the GOV length is set to a high value. However, the shorter the GOV length the better the video quality is. The setting range is from 2 to 64. The default value for H.264-1 / H.264-2 / H.264-3 / H.264-4 is 60 / 60 / 30 / 30 (NTSC) or 50 / 50 / 25 / 25 (PAL). Click on <Save> to confirm the GOV setting.

H.264 Profile
Users can set each H.264 Profile to <Baseline Profile>, <Main Profile> or <High Profile> according to its compression needs. With the same bit rate, the higher the compression ratio, the better the image quality is. The default setting is <Main Profile>.

NOTE: Please make sure the higher compression ratio is supported by system before setup.

Click on <Save> to confirm the setting.

12.4.2 Video Compression

The Video Compression setting can be found under this path: **Streaming> Video Compression**.

This setting page allows the administrator to adjust the bit rate of MJPEG and H.264-1 / H.264-2 / H.264-3 / H.264-4. Higher value implies higher bit rate and higher visual quality.

MJPEG Q (Quality) factor
The default setting of MJPEG Q factor is 35; the setting range is from 1 to 70.

H.264-1 / H.264-2 / H.264-3 / H.264-4 bit rate
The default setting of H.264-1 is 4096 kbit/s and for H.264-2 / H.264-3 / H.264-4 is 1024 kbit/s; the setting range for H.264-1 is from 64 to 8192 kbps and for H.264-2 / H.264-3 / H.264-4 is from 64 to 2048 kbit/s.

Display Compression Information
Users can also decide whether to display compression information on the home page.

CBR Mode Setting
The CBR (Constant Bit Rate) mode could be the preferred bit rate mode if the bandwidth available is limited. It is important to take account of image quality while choosing to use CBR mode.

Click on <Save> to confirm the setting.

12.4.3 Video ROI

The Video ROI setting can be found under this path: **Streaming> Video ROI**.

ROI stands for Region of Interest. This function allows users to select specific monitoring region for H.264-2, H.264-3, H.264-4 and MJPEG streams, instead of showing the full image.

NOTE: This function is only available when triple streams or above is selected under <Video Resolution> in Video Format setting.

Video ROI Setting

- **Enable H.264-2 ROI Setting**

Check the box and H.264-2 ROI Window will be displayed. To change the size of H.264-2 ROI Window, move the mouse cursor to the edge of the window and draw it outward / inward. Moving the mouse to the center of the ROI Window can shift the window to the intended location.

- **Enable H.264-3 ROI Setting**

Check the box and H.264-3 ROI Window will be displayed. To change the size of H.264-3 ROI Window, move the mouse cursor to the edge of the window and draw it outward / inward. Moving the mouse to the center of the ROI Window can shift the window to the intended location.

- **Enable H.264-4 ROI Setting**

Check the box and H.264-4 ROI Window will be displayed. To change the size of H.264-4 ROI Window, move the mouse cursor to the edge of the window and draw it outward / inward. Moving the mouse to the center of the ROI Window can shift the window to the intended location.

NOTE: The H.264-4 ROI setting is only available when H.264 + H.264 + H.264 + H.264 is selected under <Video Resolution> in Video Format Setting.

- **Enable MJPEG ROI Setting**

Check the box and MJPEG ROI Window will be displayed. To change the size of MJPEG ROI Window, move the mouse cursor to the edge of the window and draw it outward / inward. Moving the mouse to the center of the ROI Window can shift the window to the intended location.

NOTE: The MJPEG ROI setting is only available when H.264 + H.264 + H.264 + MJPEG or H.264 + H.264 + MJPEG is selected under <Video Resolution> in Video Format setting.

12.4.4 Video OCX Protocol

The Video OCX Protocol setting can be found under this path: **Streaming> Video OCX Protocol**.

In the Video OCX protocol setting page, users can select RTP over UDP, RTP over RTSP (TCP), RTSP over HTTP or MJPEG over HTTP for streaming video over the network. In the case of multicast networking, users can select the Multicast mode. Click on <Save> to confirm the setting.

Video OCX protocol setting options include:

- **RTP over UDP / RTP over RTSP(TCP) / RTSP over HTTP / MJPEG over HTTP**

- **Multicast Mode**

Enter all required data, including <Multicast IP Address>, <Multicast H.264-1 / H.264-2 / H.264-3 / H.264-4 Video Port>, <Multicast MJPEG Video Port>, <Multicast Audio Port> and <Multicast TTL> into each blank.

12.4.5 Video Frame Rate

The Video Frame Rate setting can be found under this path: **Streaming> Video Frame Rate**.

Video frame rate is for setting the frames per second (fps) if necessary.

MJPEG / H.264-1 / H.264-2 / H.264-3 / H.264-4 Frame Rate

The default setting of MJPEG / H.264-1 / H.264-2 / H.264-3 / H.264-4 Frame Rate is 30 fps (NTSC) or 25 fps (PAL); the setting range is from 1 to 30 (NTSC) or 1 to 25 (PAL). The maximum range of MJPEG / H.264-1 / H.264-2 / H.264-3 / H.264-4 Frame Rate will change according to the selected video resolution on the <Video Format> page.

Click on <Save> to confirm the setting.

NOTE: Lower frame rate will decrease video smoothness.

12.4.6 Video Mask

The Video Mask setting can be found under this path: **Streaming> Video Mask**.

Active Mask Function

- **Add a Mask**

Check a Video Mask checkbox, and a red frame will come out in the Live Video pane at the right side. Use the mouse to drag and drop to adjust the mask's size and place it on the target zone.

NOTE: It is suggested to set the Video Mask twice bigger than the object.

- **Cancel a Mask**

Uncheck the checkbox of the Video Mask that is meant to be deleted, and the selected mask will disappear from the Live Video pane instantly.

Mask Setting

- **Mask color**

The selections of Mask color include black, white, yellow, red, green, blue, cyan, and magenta. Click on <Save> to confirm the setting.

12.4.7 Audio (Audio Mode and Bit Rate Settings)

The Audio Mode setting can be found under this path: **Streaming> Audio**.

In the Audio page, the administrator can select one transmission mode and audio bit rate.

Transmission Mode

- **Full-duplex (Talk and Listen simultaneously)**

In the Full-duplex mode, the local and remote sites can communicate with each other simultaneously, i.e. both sites can speak and be heard at the same time.

- **Half-duplex (Talk or Listen, not at the same time)**

In the Half-duplex mode, the local / remote site can only talk or listen to the other site at a time.

- **Simplex (Talk only)**

In the Talk only Simplex mode, the local / remote site can only talk to the other site.

NOTE: This function is not available for Compact Fixed Dome.

- **Simplex (Listen only)**

In the Listen only Simplex mode, the local / remote site can only listen to the other site.

- **Disable**

Select the item to turn off the audio transmission function.

Server Gain Setting

Set the audio input / output gain levels for sound amplification. The audio input gain value is adjustable from 1 to 10. The audio output gain value is adjustable from 1 to 6. The sound will be turned off if the audio gain is set to “Mute”.

Bit Rate

Selectable audio transmission bit rate include 16 kbps (G.726), 24 kbps (G.726), 32 kbps (G.726), 40 kbps (G.726), uLAW (G.711) and ALAW (G.711). Both uLAW and ALAW signify 64 kbps but in different compression formats. Higher bit rate will let higher audio quality and require bigger bandwidth. Click on <Save> to confirm the setting.

Recording to Storage

Select <Enable> from the drop-down menu to enable recording audio with video into SD card.

NOTE: If the chosen bit rate is not compatible with the player, there will only be noise instead of audio during playback.

12.5 Main Tab “Camera”

Under the tab <**Camera**>, there are submenus including: <Exposure>, <White Balance>, <Picture Adjustment>, <Backlight>, <Digital Zoom>, <IR Function>, <WDR Function>, <Noise Reduction> and <TV System>.

12.5.1 Exposure

The Exposure setting can be found under this path: **Camera> Exposure**.

Exposure is the amount of light received by the image sensor. It is determined by the width of lens diaphragm opening, the shutter speed and other exposure parameters. With these items, users can define how the Auto Exposure function works. Users can select one of the exposure modes according to the operating environment. Click on <√> to confirm the new setting.

Each exposure mode is specified as follows.

Auto Mode

- **Max Gain**

Maximum Gain can be set to reduce image noises. The Max Gain range is 1dB to 3dB, or select <Off> to disable the function. The default setting is 3dB.

- **Auto Shutter Mode**

In this mode, the camera will automatically adjust the shutter speed and the iris size according to the light intensity. It is also effective if a fixed iris lens is being used. The minimum shutter speed range is configurable from 1/500 to 1 sec. (NTSC) or 1/425 to 1/1.5 sec. (PAL).

- **Shutter Priority Mode**

In this mode, it is the shutter speed that takes the main control of the exposure. The range is configurable from 1/500 to 1/30 sec. (NTSC) or 1/425 or 1/25 sec. (PAL).

NOTE: This mode is not available for Fixed Focal Lens Models.

Manual Mode

With this mode, users can select the suitable shutter speed, iris size and gain value according to the environmental illumination. The shutter speed range is from 1/10000 to 1 sec. (NTSC) or from 1/10000 to 1/1.5 sec. (PAL). The range of the iris size is from 0 to 9, or selects <Full open> to fully open the iris. The gain value range is from 1dB to 9dB, or select <Off> to disable the function.

NOTE: The <Iris Size> setting is only available for models with 3x Zoom Lens.

NOTE: The <Gain> setting is not available for Box Camera.

12.5.2 White Balance

The White Balance setting can be found under this path: **Camera> White Balance**.

A camera needs to find reference color temperature, which is a way of measuring the quality of a light source, for calculating all the other colors. The unit for measuring this ratio is in degree Kelvin (K). Users can select one of the White Balance Control modes according to the operating environment. The following table shows the color temperature of some light sources for reference. Click on <√> to confirm the new setting.

Light Sources	Color Temperature in K
Cloudy Sky	6,000 to 8,000
Noon Sun and Clear Sky	6,500
Household Lighting	2,500 to 3,000
75-watt Bulb	2,820
Candle Flame	1,200 to 1,500

Auto Mode (Auto White Balance)
The Auto White Balance mode is suitable for environments with light source having color temperature in the range roughly from 2700 ~ 7800K.

ATW Mode (Auto Tracking White Balance)
With Auto Tracking White Balance function, the white balance in a scene will be automatically adjusted while temperature color is changing. The ATW Mode is suitable for environments with light source having color temperature in the range roughly from 2500 ~ 10000K.

One Push
With One Push function, white balance is adjusted and fixed according to the scene the camera sees at the moment. This function is best for situations with minimal scene changes and continuous lighting. The function is suitable for light sources with any kind of color temperature. Follow the steps below to set the white balance.

- **Point the camera to the monitoring area.**
- **Select <One Push> in the White Balance setting menu and click <√>.**
- **Click the** **button to adjust the white balance.**

NOTE: In this mode, the value of white balance will not change as the scene or the light source varies. Therefore, users might have to re-adjust the white balance by pushing the button again when needed.

Manual Mode
In this mode, users can change the White Balance value manually. Users can select a number between 0 ~127 of “Rgain / Bgain” item to gain the red / blue illuminant on the Live Video Pane.

12.5.3 Picture Adjustment

The Picture Adjustment setting can be found under this path: **Camera> Picture Adjustment**.

Brightness
The brightness level of the images is adjustable from -12 to +13. Click on <√ > to confirm the new setting.

Sharpness
The sharpness level of the images is adjustable from +0 to +15. The edge of the objects is enhanced as the sharpness level increases. Click on < √ > to confirm the new setting.

Contrast
The contrast level of the images is adjustable from -6 to +19. Click on < √ > to confirm the new setting.

Saturation
This saturation level of the images is adjustable from -6 to +19. Click on < √ > to confirm the new setting.

Hue
The hue level of the images is adjustable from -12 to +13. Click on < √ > to confirm the new setting.

12.5.4 Backlight

The Backlight setting can be found under this path: **Camera> Backlight**.

The Backlight Compensation function prevents the center object from being too dark in surroundings where excessive light is behind the center object. Click on < √ > to confirm the new setting.

12.5.5 Digital Zoom

The Digital Zoom setting can be found under this path: **Camera> Digital Zoom**.

The digital zoom of the camera is adjustable from x2 to x8. Click on < √ > to confirm the new setting.

12.5.6 IR Function

The IR Function setting can be found under this path: **Camera> IR Function**.

Day/Night Function
This item is for users to define the action of the IR cut filter. Refer to the descriptions of each option below to select a suitable mode. Click on < √ > to confirm the new setting.

- **Auto Mode**

With this mode, the camera will decide the occasion to remove the IR cut filter.

- **Night Mode**

Use this mode when the environment light level is low. The IR cut filter will be removed to allow the camera to deliver clear images in black and white.

- **Day Mode**

Select this mode to turn on the IR cut filter. The IR cut filter can filter out the IR light and allows the camera to deliver high quality images in color.

- **Smart Mode**

With Smart mode, the camera will decide the occasion to remove the IR cut filter. The Smart mode mechanism can judge whether the main light source is from IR illumination. If the main light source is from IR illumination, the IR cut filter will be kept opened (i.e. monochrome/night mode).

For cameras with built-in IR LED module, there are three additional IR function modes available: Light Sensor /Light On / Light Off.

- **Light Sensor Mode**

IR LED lights will be turned on / off depending on the light sensor.

- **Light On Mode**

In this mode, IR LED lights will always be on.

- **Light Off Mode**

In this mode, IR LED lights will always be off.

IR Light Compensation
With the IR Light Compensation function, the camera can prevent the center object from being too dark when IR LED lights are turned on. Click on < √ > to confirm the new setting.

12.5.7 WDR Function

The WDR Function setting can be found under this path: **Camera> WDR Function**.

The Wide Dynamic Range (WDR) function is for solving high contrast or changing light issues so that enhances better video display. Different level options for WDR include Low, Mid and Hi. Higher level of WDR represents wider dynamic range, so that the IP Camera can catch a greater scale of brightness. Click on <√ > to confirm the new setting.

12.5.8 Noise Reduction

The Noise Reduction setting can be found under this path: **Camera> Noise Reduction**. .

The IP Camera provides multiple <Noise Reduction> options for delivering optimized image quality especially in extra low-light conditions.

Different level options for 3D Noise Reduction (3DNR) include Low, Mid and High. Higher level of 3DNR generates relatively enhanced noise reduction.

The proprietary Smart Picture Quality (SPQ) video processing method could drastically minimum motion blur and reduce noise especially in low-light environment. The combination of SPQ and 3DNR at different level further yields exceptional video performance in various conditions.

The Noise Reduction function is configurable with the following options: 3DNR Low, 3DNR Mid, 3DNR Hi, SPQ, SPQ + 3DNR Low, SPQ + 3DNR Mid, to SPQ + 3DNR Hi.

Click on < √ > to confirm the new setting.

12.5.9 TV System

The TV System setting can be found under this path: **Camera> TV System**.

Select the video format that matches the present TV system. Click on < √ > to confirm the new setting.

12.6 Main Tab “Logout”

Click on the tab <**Logout**> on the top of the page, and the login window will popup. This enables login with another username.

13 Configuration Files Export / Import

To export / import configuration files, users can access the Maintenance page on the user-friendly browser-based configuration interface.

The Maintenance setting can be found under this path: **System> Maintenance**.

Users can export configuration files to a specified location and retrieve data by uploading an existing configuration file to the IP Camera. This is especially convenient to make multiple cameras having the same configuration.

Export
Users can save the system settings by exporting the configuration file (.bin) to a specified location for future use. Click on the <Export> button, and the popup File Download window will come out. Click on <Save> and specify a desired location for saving the configuration file.

Upload
To upload an existing configuration file to the IP Camera, please first click on <Browse> to select the configuration file, and then click on the <Upload> button for uploading.

14 Maintenance

- The camera is maintenance-free.
- There is a limitation of rewrites that is possible with the SD memory card. Replacing the SD memory card when performing periodic maintenance on the camera is recommended, at latest after 10,000 writing cycles.
- Small amounts of dirt or dust can be cleaned from the camera using a clean soft cloth. Do not touch the lens area.
- If the surface is touched accidently use a soft cloth moistened with alcohol to clean it.

15 Disposal

All electrical and electronic products should be disposed of separately from the municipal waste stream via designated collection facilities appointed by the government or the local authorities.

This crossed-out wheeled bin symbol on the product means the product is covered by the European Directive 2002/96/EC.

The correct disposal and separate collection of your old appliance will help prevent potential negative consequences for the environment and human health. It is a precondition for reuse and recycling of used electrical and electronic equipment. For more detailed information about disposal of your old appliance, please contact your city office, waste disposal service or the shop where you purchased the product.

16 Appendix – further technical information

16.1 Setup Internet Security

If ActiveX control installation is blocked, please either set Internet security level to default or change ActiveX controls and plug-ins settings.

Internet Security Level: Default

Step 1: Start the Internet Explorer (IE).
Step 2: Click on the <Tools> tab on the menu bar and select <Internet Options>.
Step 3: Click on the <Security> tab, and select <Internet> zone.
Step 4: Down the page, click on the <Default Level> button, and click on <OK> to confirm the setting. Close the browser window, and restart a new one later to access the IP Camera.

ActiveX Controls and Plug-ins Settings

Step 1: Repeat **Steps 1~3** of the previous section above.
Step 2: Down the page, click on the <Custom Level> button to change ActiveX controls and plug-ins settings. The Security Settings window will pop up.
Step 3: Under <ActiveX controls and plug-ins>, set **ALL** items (as listed below) to <Enable> or <Prompt>. Please note that the items vary by IE version.

ActiveX controls and plug-ins settings:

1. Binary and script behaviors.
2. Download signed ActiveX controls.
3. Download unsigned ActiveX controls.
4. Allow previously unused ActiveX controls to run without prompt.
5. Allow Scriptlets.
6. Automatic prompting for ActiveX controls.
7. Initialize and script ActiveX controls not marked as safe for scripting.
8. Run ActiveX controls and plug-ins.
9. Only allow approved domains to use ActiveX without prompt.
10. Script ActiveX controls marked safe for scripting*.
11. Display video and animation on a webpage that does not use external media player.

Step 4: Click on <OK> to accept the settings. A prompt window will appear for confirming the setting changes, click <Yes(Y)> and close the Security Settings window.
Step 5: Click on <OK> to close the Internet Options screen.
Step 6: Close the browser window, and restart a new one later to access the IP Camera.

16.2 Video Resolution - setups

Video Resolution → 2M-Quad Streams

H.264 + H.264 + H.264 + H.264 / MJPEG			
H.264-1	**H.264-2**	**H.264-3**	**H.264-4 / MJPEG**
1920 x 1080 (15 fps)	1280 x 1024 (15 fps)	720 x 480 (15 fps)	352 x 240 (30 fps)
		640 x 480 (15 fps)	352 x 240 (30 fps)
		352 x 240 (30 fps)	352 x 240 (30 fps)
	1280 x 720 (15 fps)	800 x 600 (15 fps)	720 x 480 (15 fps)
			640 x 480 (15 fps)
			352 x 240 (30 fps)
		720 x 480 (15 fps)	720 x 480 (15 fps)
			640 x 480 (15 fps)
		720 x 480 (30 fps)	352 x 240 (30 fps)
		640 x 480 (15 fps)	640 x 480 (30 fps)
		640 x 480 (30 fps)	352 x 240 (30 fps)
		352 x 240 (30 fps)	352 x 240 (30 fps)
	1024 x 768 (15 fps)	800 x 600 (15 fps)	720 x 480 (15 fps)
			640 x 480 (15 fps)
			352 x 240 (30 fps)
		720 x 480 (15 fps)	720 x 480 (30 fps)
			640 x 480 (30 fps)
		720 x 480 (30 fps)	352 x 240 (30 fps)
		640 x 480 (15 fps)	640 x 480 (30 fps)
		640 x 480 (30 fps)	352 x 240 (30 fps)
		352 x 240 (30 fps)	352 x 240 (30 fps)
	800 x 600 (15 fps)	800 x 600 (15 fps)	720 x 480 (30 fps)
			640 x 480 (30 fps)
		800 x 600 (30 fps)	352 x 240 (30 fps)
		720 x 480 (15 fps)	720 x 480 (30 fps)
		720 x 480 (30 fps)	640 x 480 (30 fps)
		640 x 480 (30 fps)	640 x 480 (30 fps)
	800 x 600 (30 fps)	720 x 480 (30 fps)	352 x 240 (30 fps)
		640 x 480 (30 fps)	352 x 240 (30 fps)
		352 x 240	352 x 240

H.264 + H.264 + H.264 + H.264 / MJPEG			
H.264-1	**H.264-2**	**H.264-3**	**H.264-4 / MJPEG**
		(30 fps)	(30 fps)
	720 x 480 (15 fps)	720 x 480 (30 fps)	720 x 480 (30 fps)
			640 x 480 (30 fps)
		640 x 480 (30 fps)	640 x 480 (30 fps)
	720 x 480 (30 fps)	720 x 480 (30 fps)	352 x 240 (30 fps)
		640 x 480 (30 fps)	352 x 240 (30 fps)
		352 x 240 (30 fps)	352 x 240 (30 fps)
	640 x 480 (30 fps)	640 x 480 (30 fps)	640 x 480 (30 fps)
			352 x 240 (30 fps)
		352 x 240 (30 fps)	352 x 240 (30 fps)
	352 x 240 (30 fps)	352 x 240 (30 fps)	352 x 240 (30 fps)

H.264 + H.264 + H.264 + H.264 / MJPEG			
H.264-1	**H.264-2**	**H.264-3**	**H.264-4 / MJPEG**
1280 x 1024 (15 fps)	1280 x 1024 (15 fps)	1280 x 720 (15 fps)	720 x 480 (30 fps)
			640 x 480 (30 fps)
			352 x 240 (30 fps)
		800 x 600 (15 fps)	720 x 480 (30 fps)
			640 x 480 (30 fps)
		800 x 600 (30 fps)	352 x 240 (30 fps)
		720 x 480 (15 fps)	720 x 480 (30 fps)
		720 x 480 (30 fps)	640 x 480 (30 fps)
			352 x 240 (30 fps)
		640 x 480 (30 fps)	640 x 480 (30 fps)
			352 x 240 (30 fps)
		352 x 240 (30 fps)	352 x 240 (30 fps)
	1280 x 720 (15 fps)	1280 x 720 (15 fps)	720 x 480 (30 fps)
			640 x 480 (30 fps)
			352 x 240 (30 fps)
		800 x 600 (30 fps)	720 x 480 (30 fps)
			640 x 480 (30 fps)
			352 x 240 (30 fps)
		720 x 480 (30 fps)	720 x 480 (30 fps)
			640 x 480 (30 fps)
			352 x 240 (30 fps)
		640 x 480 (30 fps)	640 x 480 (30 fps)
			352 x 240 (30 fps)
	1280 x 720 (30 fps)	352 x 240 (30 fps)	352 x 240 (30 fps)
	1024 x 768 (15 fps)	800 x 600 (30 fps)	720 x 480 (30 fps)
			640 x 480 (30 fps)
			352 x 240 (30 fps)
		720 x 480 (30 fps)	720 x 480 (30 fps)
			640 x 480 (30 fps)
		640 x 480 (30 fps)	640 x 480 (30 fps)
	1024 x 768 (30 fps)	720 x 480 (30 fps)	352 x 240 (30 fps)
		640 x 480 (30 fps)	352 x 240 (30 fps)
		352 x 240	352 x 240

H.264 + H.264 + H.264 + H.264 / MJPEG			
H.264-1	**H.264-2**	**H.264-3**	**H.264-4 / MJPEG**
		(30 fps)	(30 fps)
	800 x 600 (15 fps)	800 x 600 (30 fps)	720 x 480 (30 fps)
	800 x 600 (30 fps)	800 x 600 (30 fps)	640 x 480 (30 fps)
			352 x 240 (30 fps)
		720 x 480 (30 fps)	720 x 480 (30 fps)
			640 x 480 (30 fps)
			352 x 240 (30 fps)
		640 x 480 (30 fps)	640 x 480 (30 fps)
			352 x 240 (30 fps)
	720 x 480 (30 fps)	720 x 480 (30 fps)	720 x 480 (30 fps)
			640 x 480 (30 fps)
			352 x 240 (30 fps)
		640 x 480 (30 fps)	640 x 480 (30 fps)
			352 x 240 (30 fps)
	640 x 480 (30 fps)	640 x 480 (30 fps)	640 x 480 (30 fps)
			352 x 240 (30 fps)
1280 x 1024 (30 fps)	800 x 600 (30 fps)	352 x 240 (30 fps)	352 x 240 (30 fps)
	720 x 480 (30 fps)	352 x 240 (30 fps)	352 x 240 (30 fps)
	640 x 480 (30 fps)	352 x 240 (30 fps)	352 x 240 (30 fps)
	352 x 240 (30 fps)	352 x 240 (30 fps)	352 x 240 (30 fps)

H.264 + H.264 + H.264 + H.264 / MJPEG			
H.264-1	**H.264-2**	**H.264-3**	**H.264-4 / MJPEG**
1280 x 720 (15 fps)	1280 x 720 (15 fps)	1280 x 720 (15 fps)	720 x 480 (30 fps)
			640 x 480 (30 fps)
		1280 x 720 (30 fps)	352 x 240 (30 fps)
		800 x 600 (30 fps)	720 x 480 (30 fps)
			640 x 480 (30 fps)
		720 x 480 (30 fps)	720 x 480 (30 fps)
			640 x 480 (30 fps)
		640 x 480 (30 fps)	640 x 480 (30 fps)
	1280 x 720 (30 fps)	800 x 600 (30 fps)	352 x 240 (30 fps)
		720 x 480 (30 fps)	352 x 240 (30 fps)
		640 x 480 (30 fps)	352 x 240 (30 fps)
		352 x 240 (30 fps)	352 x 240 (30 fps)
	1024 x 768 (15 fps)	800 x 600 (30 fps)	720 x 480 (30 fps)
			640 x 480 (30 fps)
	1024 x 768 (30 fps)	800 x 600 (30 fps)	352 x 240 (30 fps)
		720 x 480 (30 fps)	720 x 480 (30 fps)
			640 x 480 (30 fps)
			352 x 240 (30 fps)
		640 x 480 (30 fps)	640 x 480 (30 fps)
			352 x 240 (30 fps)
	800 x 600 (30 fps)	800 x 600 (30 fps)	720 x 480 (30 fps)
			640 x 480 (30 fps)
			352 x 240 (30 fps)
		720 x 480 (30 fps)	720 x 480 (30 fps)
			640 x 480 (30 fps)
		640 x 480 (30 fps)	640 x 480 (30 fps)
1280 x 720 (30 fps)	1024 x 768 (30 fps)	352 x 240 (30 fps)	352 x 240 (30 fps)
	800 x 600 (30 fps)	720 x 480 (30 fps)	352 x 240 (30 fps)
		640 x 480 (30 fps)	352 x 240 (30 fps)
		352 x 240 (30 fps)	352 x 240 (30 fps)
	720 x 480 (30 fps)	720 x 480 (30 fps)	720 x 480 (30 fps)
			640 x 480 (30 fps)
			352 x 240

H.264 + H.264 + H.264 + H.264 / MJPEG			
H.264-1	**H.264-2**	**H.264-3**	**H.264-4 / MJPEG**
			(30 fps)
		640 x 480 (30 fps)	640 x 480 (30 fps)
			352 x 240 (30 fps)
		352 x 240 (30 fps)	352 x 240 (30 fps)
	640 x 480 (30 fps)	640 x 480 (30 fps)	640 x 480 (30 fps)
			352 x 240 (30 fps)
		352 x 240 (30 fps)	352 x 240 (30 fps)
	352 x 240 (30 fps)	352 x 240 (30 fps)	352 x 240 (30 fps)
1024 x 768 (15 fps)	1024 x 768 (15 fps)	800 x 600 (30 fps)	720 x 480 (30 fps)
			640 x 480 (30 fps)
	1024 x 768 (30 fps)	800 x 600 (30 fps)	352 x 240 (30 fps)
		720 x 480 (30 fps)	720 x 480 (30 fps)
			640 x 480 (30 fps)
			352 x 240 (30 fps)
		640 x 480 (30 fps)	640 x 480 (30 fps)
	800 x 600 (30 fps)	800 x 600 (30 fps)	720 x 480 (30 fps)
			640 x 480 (30 fps)

H.264 + H.264 + H.264 + H.264 / MJPEG			
H.264-1	**H.264-2**	**H.264-3**	**H.264-4 / MJPEG**
1024 x 768 (30 fps)	1024 x 768 (30 fps)	640 x 480 (30 fps)	352 x 240 (30 fps)
		352 x 240 (30 fps)	352 x 240 (30 fps)
	800 x 600 (30 fps)	800 x 600 (30 fps)	352 x 240 (30 fps)
		720 x 480 (30 fps)	720 x 480 (30 fps)
			640 x 480 (30 fps)
			352 x 240 (30 fps)
		640 x 480 (30 fps)	640 x 480 (30 fps)
			352 x 240 (30 fps)
		352 x 240 (30 fps)	352 x 240 (30 fps)
	720 x 480 (30 fps)	720 x 480 (30 fps)	720 x 480 (30 fps)
			640 x 480 (30 fps)
			352 x 240 (30 fps)
		640 x 480 (30 fps)	640 x 480 (30 fps)
			352 x 240 (30 fps)
		352 x 240 (30 fps)	352 x 240 (30 fps)
	640 x 480 (30 fps)	640 x 480 (30 fps)	640 x 480 (30 fps)
			352 x 240 (30 fps)
		352 x 240 (30 fps)	352 x 240 (30 fps)
	352 x 240 (30 fps)	352 x 240 (30 fps)	352 x 240 (30 fps)
800 x 600 (30 fps)	800 x 600 (30 fps)	800 x 600 (30 fps)	352 x 240 (30 fps)
		720 x 480 (30 fps)	720 x 480 (30 fps)
			640 x 480 (30 fps)
			352 x 240 (30 fps)
		640 x 480 (30 fps)	640 x 480 (30 fps)
			352 x 240 (30 fps)
		352 x 240 (30 fps)	352 x 240 (30 fps)
	720 x 480 (30 fps)	720 x 480 (30 fps)	720 x 480 (30 fps)
			640 x 480 (30 fps)
			352 x 240 (30 fps)
		640 x 480 (30 fps)	640 x 480 (30 fps)
			352 x 240 (30 fps)
		352 x 240 (30 fps)	352 x 240 (30 fps)
	640 x 480	640 x 480	640 x 480

H.264 + H.264 + H.264 + H.264 / MJPEG			
H.264-1	**H.264-2**	**H.264-3**	**H.264-4 / MJPEG**
	(30 fps)	(30 fps)	(30 fps)
			352 x 240 (30 fps)
		352 x 240 (30 fps)	352 x 240 (30 fps)
	352 x 240 (30 fps)	352 x 240 (30 fps)	352 x 240 (30 fps)
720 x 480 (30 fps)	720 x 480 (30 fps)	720 x 480 (30 fps)	720 x 480 (30 fps)
			640 x 480 (30 fps)
			352 x 240 (30 fps)
		640 x 480 (30 fps)	640 x 480 (30 fps)
			352 x 240 (30 fps)
		352 x 240 (30 fps)	352 x 240 (30 fps)
	640 x 480 (30 fps)	640 x 480 (30 fps)	640 x 480 (30 fps)
			352 x 240 (30 fps)
		352 x 240 (30 fps)	352 x 240 (30 fps)
	352 x 240 (30 fps)	352 x 240 (30 fps)	352 x 240 (30 fps)
640 x 480 (30 fps)	640 x 480 (30 fps)	640 x 480 (30 fps)	640 x 480 (30 fps)
			352 x 240 (30 fps)
		352 x 240 (30 fps)	352 x 240 (30 fps)
	352 x 240 (30 fps)	352 x 240 (30 fps)	352 x 240 (30 fps)
352 x 240 (30 fps)	352 x 240 (30 fps)	352 x 240 (30 fps)	352 x 240 (30 fps)

Video Resolution → 2M-Triple Streams

H.264-1 + H.264-2 + H.264-3 / MJPEG		
H.264-1	**H.264-2**	**H.264-3 / MJPEG**
1920 x 1080 (15 fps)	1280 x 1024 (15 fps)	800 x 600 (15 fps)
		720 x 480 (15 fps)
		640 x 480 (15 fps)
		352 x 240 (30 fps)
	1280 x 720 (15 fps)	1280 x 720 (15 fps)
		800 x 600 (15 fps)
		720 x 480 (30 fps)
		640 x 480 (30 fps)
		352 x 240 (30 fps)
	1024 x 768 (15 fps)	800 x 600 (30 fps)
		720 x 480 (30 fps)
		640 x 480 (30 fps)
	1024 x 768 (30 fps)	352 x 240 (30 fps)
	800 x 600 (15 fps)	800 x 600 (30 fps)
	800 x 600 (30 fps)	720 x 480 (30 fps)
		640 x 480 (30 fps)
		352 x 240 (30 fps)
	720 x 480 (30 fps)	720 x 480 (30 fps)
		640 x 480 (30 fps)
		352 x 240 (30 fps)
	640 x 480 (30 fps)	640 x 480 (30 fps)
		352 x 240 (30 fps)
	352 x 240 (30fps)	352 x 240 (30fps)
1280 x 1024 (15 fps)	1280 x 1024 (15 fps)	1280 x 720 (15 fps)
		800 x 600 (30 fps)
		720 x 480 (30 fps)
		640 x 480 (30 fps)
		352 x 240 (30 fps)
	1280 x 720 (15 fps)	1280 x 720 (15 fps)
		800 x 600 (30 fps)
	1280 x 720 (30 fps)	720 x 480 (30 fps)
		640 x 480 (30 fps)
		352 x 240 (30 fps)
	1024 x 768 (30 fps)	800 x 600 (30 fps)
		720 x 480 (30 fps)
		640 x 480 (30 fps)
		352 x 240 (30 fps)
	800 x 600 (30 fps)	800 x 600 (30 fps)
		720 x 480 (30 fps)
		640 x 480 (30 fps)
	720 x 480 (30 fps)	720 x 480 (30 fps)
1280 x 1024 (30 fps)	800 x 600 (30 fps)	352 x 240 (30 fps)
	720 x 480 (30 fps)	640 x 480 (30 fps)
		352 x 240 (30 fps)
	640 x 480 (30 fps)	640 x 480 (30 fps)
		352 x 240 (30 fps)
	352 x 240 (30 fps)	352 x 240 (30 fps)
1280 x 720 (15 fps)	1280 x 720 (15 fps)	1280 x 720 (30 fps)
	1280 x 720 (30 fps)	800 x 600 (30 fps)
		720 x 480 (30 fps)
		640 x 480 (30 fps)
	1024 x 768 (30 fps)	800 x 600 (30 fps)
		720 x 480 (30 fps)
		640 x 480 (30 fps)

H.264-1 + H.264-2 + H.264-3 / MJPEG		
H.264-1	**H.264-2**	**H.264-3 / MJPEG**
1280 x 720 (30 fps)	1280 x 720 (30 fps)	352 x 240 (30 fps)
	1024 x 768 (30 fps)	352 x 240 (30 fps)
	800 x 600 (30 fps)	800 x 600 (30 fps)
		720 x 480 (30 fps)
		640 x 480 (30 fps)
		352 x 240 (30 fps)
	720 x 480 (30 fps)	720 x 480 (30 fps)
		640 x 480 (30 fps)
		352 x 240 (30 fps)
	640 x 480 (30 fps)	640 x 480 (30 fps)
		352 x 240 (30 fps)
	352 x 240 (30 fps)	352 x 240 (30 fps)
1024 x 768 (15 fps)	1024 x 768 (30 fps)	800 x 600 (30 fps)
1024 x 768 (30 fps)	1024 x 768 (30 fps)	720 x 480 (30 fps)
		640 x 480 (30 fps)
		352 x 240 (30 fps)
	800 x 600 (30 fps)	800 x 600 (30 fps)
		720 x 480 (30 fps)
		640 x 480 (30 fps)
		352 x 240 (30 fps)
	720 x 480 (30 fps)	720 x 480 (30 fps)
		640 x 480 (30 fps)
		352 x 240 (30 fps)
	640 x 480 (30 fps)	640 x 480 (30 fps)
		352 x 240 (30 fps)
	352 x 240 (30 fps)	352 x 240 (30 fps)
800 x 600 (30 fps)	800 x 600 (30 fps)	800 x 600 (30 fps)
		720 x 480 (30 fps)
		640 x 480 (30 fps)
		352 x 240 (30 fps)
	720 x 480 (30 fps)	720 x 480 (30 fps)
		640 x 480 (30 fps)
		352 x 240 (30 fps)
	640 x 480 (30 fps)	640 x 480 (30 fps)
		352 x 240 (30 fps)
	352 x 240 (30 fps)	352 x 240 (30 fps)
720 x 480 (30 fps)	720 x 480 (30 fps)	720 x 480 (30 fps)
		640 x 480 (30 fps)
		352 x 240 (30 fps)
	640 x 480 (30 fps)	640 x 480 (30 fps)
		352 x 240 (30 fps)
	352 x 240 (30 fps)	352 x 240 (30 fps)
640 x 480 (30 fps)	640 x 480 (30 fps)	640 x 480 (30 fps)
		352 x 240 (30 fps)
	352 x 240 (30 fps)	352 x 240 (30 fps)
352 x 240 (30 fps)	352 x 240 (30 fps)	352 x 240 (30 fps)

Video Resolution → 2M- Dual Streams

H.264-1 + H.264-2 / MJPEG	
H.264-1	**H.264-2 / MJPEG**
1920 x 1080 (15 fps)	1280 x 1024 (15 fps)
	1280 x 720 (30 fps)
	1024 x 768 (30 fps)
	800 x 600 (30 fps)
	720 x 480 (30 fps)
	640 x 480 (30 fps)
	352 x 240 (30 fps)
1280 x 1024 (30 fps)	1280 x 1024 (15 fps)
	1280 x 720 (15 fps)
	1024 x 768 (15 fps)
	800 x 600 (30 fps)
	720 x 480 (30 fps)
	640 x 480 (30 fps)
	352 x 240 (30 fps)
1280 x 720 (30 fps)	1280 x 720 (30 fps)
	1024 x 768 (30 fps)
	800 x 600 (30 fps)
	720 x 480 (30 fps)
	640 x 480 (30 fps)
	352 x 240 (30 fps)
1024 x 768 (30 fps)	1024 x 768 (30 fps)
	800 x 600 (30 fps)
	720 x 480 (30 fps)
	640 x 480 (30 fps)
	352 x 240 (30 fps)
800 x 600 (30 fps)	800 x 600 (30 fps)
	720 x 480 (30 fps)
	640 x 480 (30 fps)
	352 x 240 (30 fps)
720 x 480 (30 fps)	720 x 480 (30 fps)
	640 x 480 (30 fps)
	352 x 240 (30 fps)
640 x 480 (30 fps)	640 x 480 (30 fps)
	352 x 240 (30 fps)
352 x 240 (30 fps)	352 x 240 (30 fps)

Video Resolution → 2M Single Stream

H.264 Only
1920 x 1080 (15 fps) Low Latency
1920 x 1080 (15 fps)
1280 x 1024 (30 fps)
1280 x 720 (30 fps)
1024 x 768 (30 fps)
800 x 600 (30 fps)
720 x 480 (30 fps)
640 x 480 (30 fps)
352 x 240 (30 fps)

MJPEG Only
1920 x 1080 (15 fps)
1280 x 1024 (30 fps)
1280 x 720 (30 fps)
1024 x 768 (30 fps)
800 x 600 (30 fps)
720 x 480 (30 fps)
640 x 480 (30 fps)
352 x 240 (30 fps)

Video Resolution → 2M Real time- Quad Streams

H.264 + H.264 + H.264 + H.264 / MJPEG			
H.264-1	**H.264-2**	**H.264-3**	**H.264-4 / MJPEG**
1920 x 1080 (15 fps)	1280 x 1024 (15 fps)	1280 x 720 (15 fps)	720 x 480 (15 fps)
			640 x 480 (15 fps)
			352 x 240 (30 fps)
		800 x 600 (15 fps)	720 x 480 (30 fps)
			640 x 480 (30 fps)
		800 x 600 (30 fps)	352 x 240 (30 fps)
		720 x 480 (15 fps)	720 x 480 (30 fps)
		720 x 480 (30 fps)	640 x 480 (30 fps)
			352 x 240 (30 fps)
		640 x 480 (30 fps)	640 x 480 (30 fps)
			352 x 240 (30 fps)
		352 x 240 (30 fps)	352 x 240 (30 fps)
	1280 x 720 (15 fps)	1280 x 720 (15 fps)	720 x 480 (30 fps)
			640 x 480 (30 fps)
			352 x 240 (30 fps)
		800 x 600 (30 fps)	720 x 480 (30 fps)
			640 x 480 (30 fps)
			352 x 240 (30 fps)
		720 x 480 (30 fps)	720 x 480 (30 fps)
			640 x 480 (30 fps)
		640 x 480 (30 fps)	640 x 480 (30 fps)
	1280 x 720 (30 fps)	720 x 480 (30 fps)	352 x 240 (30 fps)
		640 x 480 (30 fps)	352 x 240 (30 fps)
		352 x 240 (30 fps)	352 x 240 (30 fps)
	1024 x 768 (15 fps)	800 x 600 (30 fps)	720 x 480 (30 fps)
			640 x 480 (30 fps)
		720 x 480 (30 fps)	720 x 480 (30 fps)
			640 x 480 (30 fps)
		640 x 480 (30 fps)	640 x 480 (30 fps)
	1024 x 768 (30 fps)	800 x 600 (30 fps)	352 x 240 (30 fps)
		720 x 480 (30 fps)	352 x 240 (30 fps)
		640 x 480 (30 fps)	352 x 240 (30 fps)
		352 x 240 (30 fps)	352 x 240 (30 fps)
	800 x 600 (30 fps)	800 x 600 (30 fps)	720 x 480 (30 fps)
			640 x 480 (30 fps)
			352 x 240 (30 fps)
		720 x 480 (30 fps)	720 x 480 (30 fps)
			640 x 480 (30 fps)
			352 x 240 (30 fps)
		640 x 480 (30 fps)	640 x 480 (30 fps)
			352 x 240 (30 fps)
		352 x 240 (30 fps)	352 x 240 (30 fps)
	720 x 480 (30 fps)	720 x 480 (30 fps)	720 x 480 (30 fps)
			640 x 480 (30 fps)
			352 x 240 (30 fps)
		640 x 480 (30 fps)	640 x 480 (30 fps)
			352 x 240 (30 fps)
		352 x 240 (30 fps)	352 x 240 (30 fps)
	640 x 480 (30 fps)	640 x 480 (30 fps)	640 x 480 (30 fps)
			352 x 240 (30 fps)
		352 x 240 (30 fps)	352 x 240 (30 fps)
1920 x 1080 (30 fps)	352 x 240 (30 fps)	352 x 240 (30 fps)	352 x 240 (30 fps)

H.264 + H.264 + H.264 + H.264 / MJPEG			
H.264-1	**H.264-2**	**H.264-3**	**H.264-4 / MJPEG**
1280 x 1024 (15 fps)	1280 x 1024 (15 fps)	1280 x 720 (15 fps)	720 x 480 (30 fps)
			640 x 480 (30 fps)
		1280 x 720 (30 fps)	352 x 240 (30 fps)
		800 x 600 (30 fps)	720 x 480 (30 fps)
			640 x 480 (30 fps)
			352 x 240 (30 fps)
		720 x 480 (30 fps)	720 x 480 (30 fps)
			640 x 480 (30 fps)
		640 x 480 (30 fps)	640 x 480 (30 fps)
	1280 x 1024 (30 fps)	720 x 480 (30 fps)	352 x 240 (30 fps)
		640 x 480 (30 fps)	352 x 240 (30 fps)
		352 x 240 (30 fps)	352 x 240 (30 fps)
	1280 x 720 (15 fps)	1280 x 720 (30 fps)	720 x 480 (30 fps)
			640 x 480 (30 fps)
			352 x 240 (30 fps)
	1280 x 720 (30 fps)	800 x 600 (30 fps)	720 x 480 (30 fps)
			640 x 480 (30 fps)
			352 x 240 (30 fps)
		720 x 480 (30 fps)	720 x 480 (30 fps)
			640 x 480 (30 fps)
			352 x 240 (30 fps)
		640 x 480 (30 fps)	640 x 480 (30 fps)
			352 x 240 (30 fps)
		352 x 240 (30 fps)	352 x 240 (30 fps)
	1024 x 768 (30 fps)	800 x 600 (30 fps)	720 x 480 (30 fps)
			640 x 480 (30 fps)
			352 x 240 (30 fps)
		720 x 480 (30 fps)	720 x 480 (30 fps)
			640 x 480 (30 fps)
			352 x 240 (30 fps)
		640 x 480 (30 fps)	640 x 480 (30 fps)
			352 x 240 (30 fps)

H.264 + H.264 + H.264 + H.264 / MJPEG			
H.264-1	**H.264-2**	**H.264-3**	**H.264-4 / MJPEG**
	800 x 600 (30 fps)	800 x 600 (30 fps)	720 x 480 (30 fps)
			640 x 480 (30 fps)
		720 x 480 (30 fps)	720 x 480 (30 fps)
			640 x 480 (30 fps)
1280 x 1024 (30 fps)	1024 x 768 (30 fps)	352 x 240 (30 fps)	352 x 240 (30 fps)
	800 x 600 (30 fps)	800 x 600 (30 fps)	352 x 240 (30 fps)
		720 x 480 (30 fps)	352 x 240 (30 fps)
		640 x 480 (30 fps)	640 x 480 (30 fps)
			352 x 240 (30 fps)
		352 x 240 (30 fps)	352 x 240 (30 fps)
	720 x 480 (30 fps)	720 x 480 (30 fps)	720 x 480 (30 fps)
			640 x 480 (30 fps)
			352 x 240 (30 fps)
		640 x 480 (30 fps)	640 x 480 (30 fps)
			352 x 240 (30 fps)
		352 x 240 (30 fps)	352 x 240 (30 fps)
	640 x 480 (30 fps)	640 x 480 (30 fps)	640 x 480 (30 fps)
			352 x 240 (30 fps)
		352 x 240 (30 fps)	352 x 240 (30 fps)
	352 x 240 (30 fps)	352 x 240 (30 fps)	352 x 240 (30 fps)
1280 x 720 (15 fps)	1280 x 720 (15 fps)	1280 x 720 (30 fps)	720 x 480 (30 fps)
			640 x 480 (30 fps)
	1280 x 720 (30 fps)	1280 x 720 (30 fps)	352 x 240 (30 fps)
		800 x 600 (30 fps)	720 x 480 (30 fps)
			640 x 480 (30 fps)
		720 x 480 (30 fps)	720 x 480 (30 fps)
			640 x 480 (30 fps)
		640 x 480 (30 fps)	640 x 480 (30 fps)
	1024 x 768 (30 fps)	800 x 600 (30 fps)	720 x 480 (30 fps)
			640 x 480 (30 fps)

H.264 + H.264 + H.264 + H.264 / MJPEG			
H.264-1	**H.264-2**	**H.264-3**	**H.264-4 / MJPEG**
1280 x 720 (30 fps)	1280 x 720 (30 fps)	800 x 600 (30 fps)	352 x 240 (30 fps)
		720 x 480 (30 fps)	352 x 240 (30 fps)
		640 x 480 (30 fps)	352 x 240 (30 fps)
		352 x 240 (30 fps)	352 x 240 (30 fps)
	1024 x 768 (30 fps)	800 x 600 (30 fps)	352 x 240 (30 fps)
		720 x 480 (30 fps)	720 x 480 (30 fps)
			640 x 480 (30 fps)
			352 x 240 (30 fps)
		640 x 480 (30 fps)	640 x 480 (30 fps)
			352 x 240 (30 fps)
		352 x 240 (30 fps)	352 x 240 (30 fps)
	800 x 600 (30 fps)	800 x 600 (30 fps)	720 x 480 (30 fps)
			640 x 480 (30 fps)
			352 x 240 (30 fps)
		720 x 480 (30 fps)	720 x 480 (30 fps)
			640 x 480 (30 fps)
			352 x 240 (30 fps)
		640 x 480 (30 fps)	640 x 480 (30 fps)
			352 x 240 (30 fps)
		352 x 240 (30 fps)	352 x 240 (30 fps)
	720 x 480 (30 fps)	720 x 480 (30 fps)	720 x 480 (30 fps)
			640 x 480 (30 fps)
			352 x 240 (30 fps)
		640 x 480 (30 fps)	640 x 480 (30 fps)
			352 x 240 (30 fps)
		352 x 240 (30 fps)	352 x 240 (30 fps)
	640 x 480 (30 fps)	640 x 480 (30 fps)	640 x 480 (30 fps)
			352 x 240 (30 fps)
		352 x 240 (30 fps)	352 x 240 (30 fps)
	352 x 240 (30 fps)	352 x 240 (30 fps)	352 x 240 (30 fps)
1024 x 768 (30 fps)	1024 x 768 (30 fps)	800 x 600 (30 fps)	720 x 480 (30 fps)
			640 x 480 (30 fps)

H.264 + H.264 + H.264 + H.264 / MJPEG			
H.264-1	**H.264-2**	**H.264-3**	**H.264-4 / MJPEG**
			352 x 240 (30 fps)
		720 x 480 (30 fps)	720 x 480 (30 fps)
			640 x 480 (30 fps)
			352 x 240 (30 fps)
		640 x 480 (30 fps)	640 x 480 (30 fps)
			352 x 240 (30 fps)
		352 x 240 (30 fps)	352 x 240 (30 fps)
	800 x 600 (30 fps)	800 x 600 (30 fps)	720 x 480 (30 fps)
			640 x 480 (30 fps)
			352 x 240 (30 fps)
		720 x 480 (30 fps)	720 x 480 (30 fps)
			640 x 480 (30 fps)
			352 x 240 (30 fps)
		640 x 480 (30 fps)	640 x 480 (30 fps)
			352 x 240 (30 fps)
		352 x 240 (30 fps)	352 x 240 (30 fps)
	720 x 480 (30 fps)	720 x 480 (30 fps)	720 x 480 (30 fps)
			640 x 480 (30 fps)
			352 x 240 (30 fps)
		640 x 480 (30 fps)	640 x 480 (30 fps)
			352 x 240 (30 fps)
		352 x 240 (30 fps)	352 x 240 (30 fps)
	640 x 480 (30 fps)	640 x 480 (30 fps)	640 x 480 (30 fps)
			352 x 240 (30 fps)
		352 x 240 (30 fps)	352 x 240 (30 fps)
	352 x 240 (30 fps)	352 x 240 (30 fps)	352 x 240 (30 fps)

H.264 + H.264 + H.264 + H.264 / MJPEG			
H.264-1	**H.264-2**	**H.264-3**	**H.264-4 / MJPEG**
800 x 600 (30 fps)	800 x 600 (30 fps)	800 x 600 (30 fps)	352 x 240 (30 fps)
		720 x 480 (30 fps)	720 x 480 (30 fps)
			640 x 480 (30 fps)
			352 x 240 (30 fps)
		640 x 480 (30 fps)	640 x 480 (30 fps)
			352 x 240 (30 fps)
		352 x 240 (30 fps)	352 x 240 (30 fps)
	720 x 480 (30 fps)	720 x 480 (30 fps)	720 x 480 (30 fps)
			640 x 480 (30 fps)
			352 x 240 (30 fps)
		640 x 480 (30 fps)	640 x 480 (30 fps)
			352 x 240 (30 fps)
		352 x 240 (30 fps)	352 x 240 (30 fps)
	640 x 480 (30 fps)	640 x 480 (30 fps)	640 x 480 (30 fps)
			352 x 240 (30 fps)
		352 x 240 (30 fps)	352 x 240 (30 fps)
	352 x 240 (30 fps)	352 x 240 (30 fps)	352 x 240 (30 fps)
720 x 480 (30 fps)	720 x 480 (30 fps)	720 x 480 (30 fps)	720 x 480 (30 fps)
			640 x 480 (30 fps)
			352 x 240 (30 fps)
		640 x 480 (30 fps)	640 x 480 (30 fps)
			352 x 240 (30 fps)
		352 x 240 (30 fps)	352 x 240 (30 fps)
	640 x 480 (30 fps)	640 x 480 (30 fps)	640 x 480 (30 fps)
			352 x 240 (30 fps)
		352 x 240 (30 fps)	352 x 240 (30 fps)
	352 x 240 (30 fps)	352 x 240 (30 fps)	352 x 240 (30 fps)
640 x 480 (30 fps)	640 x 480 (30 fps)	640 x 480 (30 fps)	640 x 480 (30 fps)
			352 x 240 (30 fps)
		352 x 240 (30 fps)	352 x 240 (30 fps)
	352 x 240 (30 fps)	352 x 240 (30 fps)	352 x 240 (30 fps)
352 x 240 (30 fps)	352 x 240 (30 fps)	352 x 240 (30 fps)	352 x 240 (30 fps)

Video Resolution → 2M Real time- Triple Streams

H.264-1 + H.264-2 + H.264-3 / MJPEG		
H.264-1	**H.264-2**	**H.264-3 / MJPEG**
1920 x 1080 (15 fps)	1280 x 1024 (15 fps)	1280 x 720 (15 fps)
		800 x 600 (30 fps)
		720 x 480 (30 fps)
		640 x 480 (30 fps)
		352 x 240 (30 fps)
	1280 x 720 (15 fps)	1280 x 720 (30 fps)
		800 x 600 (30 fps)
	1280 x 720 (30 fps)	720 x 480 (30 fps)
		640 x 480 (30 fps)
		352 x 240 (30 fps)
	1024 x 768 (30 fps)	800 x 600 (30 fps)
		720 x 480 (30 fps)
		640 x 480 (30 fps)
		352 x 240 (30 fps)
	800 x 600 (30 fps)	800 x 600 (30 fps)
		720 x 480 (30 fps)
		640 x 480 (30 fps)
		352 x 240 (30 fps)
	720 x 480 (30 fps)	720 x 480 (30 fps)
		640 x 480 (30 fps)
		352 x 240 (30 fps)
	640 x 480 (30 fps)	640 x 480 (30 fps)
		352 x 240 (30 fps)
1920 x 1080 (30 fps)	352 x 240 (30 fps)	352 x 240 (30 fps)
1280 x 1024 (15 fps)	1280 x 1024 (15 fps)	1280 x 720 (30 fps)
		800 x 600 (30 fps)
	1280 x 1024 (30 fps)	720 x 480 (30 fps)
		640 x 480 (30 fps)
		352 x 240 (30 fps)
	1280 x 720 (15 fps)	1280 x 720 (30 fps)
	1280 x 720 (30 fps)	800 x 600 (30 fps)
		720 x 480 (30 fps)
		640 x 480 (30 fps)
	1024 x 768 (30 fps)	800 x 600 (30 fps)
		720 x 480 (30 fps)
1280 x 1024 (30 fps)	1280 x 720 (30 fps)	352 x 240 (30 fps)
	1024 x 768 (30 fps)	640 x 480 (30 fps)
		352 x 240 (30 fps)
	800 x 600 (30 fps)	800 x 600 (30 fps)
		720 x 480 (30 fps)
		640 x 480 (30 fps)
		352 x 240 (30 fps)
	720 x 480 (30 fps)	720 x 480 (30 fps)
		640 x 480 (30 fps)
		352 x 240 (30 fps)
	640 x 480 (30 fps)	640 x 480 (30 fps)
		352 x 240 (30 fps)
	352 x 240 (30 fps)	352 x 240 (30 fps)
1280 x 720 (15 fps)	1280 x 720 (30 fps)	1280 x 720 (30 fps)

H.264-1 + H.264-2 + H.264-3 / MJPEG		
H.264-1	**H.264-2**	**H.264-3 / MJPEG**
1280 x 720 (30 fps)	1280 x 720 (30 fps)	800 x 600 (30 fps)
		720 x 480 (30 fps)
		640 x 480 (30 fps)
		352 x 240 (30 fps)
	1024 x 768 (30 fps)	800 x 600 (30 fps)
		720 x 480 (30 fps)
		640 x 480 (30 fps)
		352 x 240 (30 fps)
	800 x 600 (30 fps)	800 x 600 (30 fps)
		720 x 480 (30 fps)
		640 x 480 (30 fps)
		352 x 240 (30 fps)
	720 x 480 (30 fps)	720 x 480 (30 fps)
		640 x 480 (30 fps)
		352 x 240 (30 fps)
	640 x 480 (30 fps)	640 x 480 (30 fps)
		352 x 240 (30 fps)
	352 x 240 (30 fps)	352 x 240 (30 fps)
1024 x 768 (30 fps)	1024 x 768 (30 fps)	800 x 600 (30 fps)
		720 x 480 (30 fps)
		640 x 480 (30 fps)
		352 x 240 (30 fps)
	800 x 600 (30 fps)	800 x 600 (30 fps)
		720 x 480 (30 fps)
		640 x 480 (30 fps)
		352 x 240 (30 fps)
	720 x 480 (30 fps)	720 x 480 (30 fps)
		640 x 480 (30 fps)
		352 x 240 (30 fps)
	640 x 480 (30 fps)	640 x 480 (30 fps)
		352 x 240 (30 fps)
	352 x 240 (30 fps)	352 x 240 (30 fps)
800 x 600 (30 fps)	800 x 600 (30 fps)	800 x 600 (30 fps)
		720 x 480 (30 fps)
		640 x 480 (30 fps)
		352 x 240 (30 fps)
	720 x 480 (30 fps)	720 x 480 (30 fps)
		640 x 480 (30 fps)
		352 x 240 (30 fps)
	640 x 480 (30 fps)	640 x 480 (30 fps)
		352 x 240 (30 fps)
	352 x 240 (30 fps)	352 x 240 (30 fps)
720 x 480 (30 fps)	720 x 480 (30 fps)	720 x 480 (30 fps)
		640 x 480 (30 fps)
		352 x 240 (30 fps)
	640 x 480 (30 fps)	640 x 480 (30 fps)
		352 x 240 (30 fps)
	352 x 240 (30 fps)	352 x 240 (30 fps)
640 x 480 (30 fps)	640 x 480 (30 fps)	640 x 480 (30 fps)
		352 x 240 (30 fps)
	352 x 240 (30 fps)	352 x 240 (30 fps)
352 x 240 (30 fps)	352 x 240 (30 fps)	352 x 240 (30 fps)

Video Resolution → 2M Real time- Dual Streams

H.264-1 + H.264-2 / MJPEG	
H.264-1	**H.264-2 / MJPEG**
1920 x 1080 (15 fps)	1920 x 1080 (15 fps)
	1280 x 1024 (30 fps)
	1280 x 720 (30 fps)
	1024 x 768 (30 fps)
	800 x 600 (30 fps)
1920 x 1080 (30 fps)	720 x 480 (30 fps)
	640 x 480 (30 fps)
	352 x 240 (30 fps)
1280 x 1024 (30 fps)	1280 x 1024 (15 fps)
	1280 x 720 (30 fps)
	1024 x 768 (30 fps)
	800 x 600 (30 fps)
	720 x 480 (30 fps)
	640 x 480 (30 fps)
	352 x 240 (30 fps)
1280 x 720 (30 fps)	1280 x 720 (30 fps)
	1024 x 768 (30 fps)
	800 x 600 (30 fps)
	720 x 480 (30 fps)
	640 x 480 (30 fps)
	352 x 240 (30 fps)
1024 x 768 (30 fps)	1024 x 768 (30 fps)
	800 x 600 (30 fps)
	720 x 480 (30 fps)
	640 x 480 (30 fps)
	352 x 240 (30 fps)
800 x 600 (30 fps)	800 x 600 (30 fps)
	720 x 480 (30 fps)
	640 x 480 (30 fps)
	352 x 240 (30 fps)
720 x 480 (30 fps)	720 x 480 (30 fps)
	640 x 480 (30 fps)
	352 x 240 (30 fps)
640 x 480 (30 fps)	640 x 480 (30 fps)
	352 x 240 (30 fps)
352 x 240 (30 fps)	352 x 240 (30 fps)

Video Resolution → 2M Real time- Single Stream

MJPEG Only
1920 x 1080 (30 fps)
1280 x 1024 (30 fps)
1280 x 720 (30 fps)
1024 x 768 (30 fps)
800 x 600 (30 fps)
720 x 480 (30 fps)
640 x 480 (30 fps)
352 x 240 (30 fps)

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